THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXIII.—No. 4162

NOVEMBER 10, 1922.

THE R.I.B.A. AND ITS POLICY.

THOUGH the President's opening address is not the beginning of the new session of the Royal Institute of British Architects it is the event of the year which is taken to mark its opening, and in an issue containing the admirable remarks of the President, Mr. Paul Waterhouse—an address in which he considered some London and other problems of general and professional interest—it may not be an unsuitable occasion to take stock of the present position of the Institute and to offer one or two suggestions.

The Council election last June was fought on the unification and registration policy of the late Council, and the result obtained from less than half the voting strength of the members appeared to support the well-meaning objections to that policy entertained by the Defence League party, who were so much opposed to unification of the profession as a preliminary step to registration. The first act of the new Council, which was elected largely through the activities of the League, was to dissolve the Unification and Registration Committee which was in being, and which, though it had given much time and thought to the consideration of the means by which unification and registration could be secured, had not reported. It is probably well known that this journal was the vehicle for many of the opinions, which were given at length and with much frequency, on both sides to the controversy, and that our own opinion had always been that the unification policy of the late Council could not very well be the issue at the election in the absence of the considered proposals of the Committee; moreover, that though the majority of the electorate—or that part of it which took the trouble to vote—thought otherwise, we questioned the wisdom of the new Council in making their first act after election the abolition of the Unification and Registration Committee, without giving that body time to consider their position and, of course, before they had completed their labours, and without any sort of consultation with them before doing so. This procedure was, it appeared to us, unusual, to say the least, and we are not surprised that it has incensed supporters of the unification and registration policy of the late Council, who were and are no less concerned for the well-being of the Institute and the profession than the new Council and their supporters. It is not as though the views of the whole profession were known; they were not, and the election showed, on an increased poll it is true, characteristic apathy on the part of the electorate. But it could not be inferred from the actual vote that there was anything like unanimity against the policy of unification first and registration afterwards. Though the supporters of the anti-unification policy were successful, the vote was not so demonstrably in their favour as to preclude the idea that it did not represent the actual opinion of the electorate. The transference of one hundred votes from the successful to the unsuccessful party would have turned the unification minority into a majority, and an overwhelming majority with the nominated members of Council known to be in favour of unification; while it is impossible to say what the apathetic non-voting members of the Institute thought and still less what they think to-day. Their views and the wishes of the profession as a whole could have been obtained by means of a plebiscite, which is the step the late Council were pledged to whatever the Unification Committee had reported, and in the absence, as we contend, of an overwhelming vote, and in order to secure an emphatic mandate, we expected the new Council to avail themselves of this means of ascertaining the opinions of those they desire to represent, for we are convinced it is their desire to represent not only a policy they believe to be for the good of the profession and the art they practise, but a policy which shall be in harmony with the views of those who belong to the Institute.

The Council of the Institute may know what the proposals of the Unification and Registration Committee were and how that body would report, and they may be justified in believing that the proposed scheme was undesirable; but the members of the Institute as a whole do not know, and we think the new Council would have done much to strengthen their position and would have earned the respect and confidence of everyone had they allowed the Unification Committee to complete their work or have taken a postal vote on the proposals of the Committee if or when they were known. Is it too late to ask the Council to reconsider their decision and to reappoint the Unification Committee with the object of completing their work? Or, failing that, to take a plebiscite of the members of the Institute on the issue? We know the Council is pledged to a Registration Bill, but has any Bill for the registration of architects which they can submit any chance whatever of becoming law at the present time? It is the considered opinion of all who have carefully considered the subject that such a Bill has no chance whatever unless it is presented by a united profession, whereas a well-considered scheme of unification as a preliminary to registration should do much to strengthen the hands of the Institute as a body representing the architects of the country, and would at once improve the position of most individual architects. At least, that is what we hope the Committee's scheme would provide for, and if it did not we should still be free to vote against it. If the new Council, therefore, would adopt one or other of the suggestions we have made, they would do much to inspire confidence in their wisdom and judgment, and would obtain for themselves as a body the respect and regard which many of their members have earned for themselves individually by their work for the Institute and the profession they follow.

The matter may be considered from another point of view. It is well known that the relations of the R.I.B.A., as a London body, with the allied societies have greatly improved of late, and that, while there is still criticism of the Institute that it does little for the provincial member, there has been a healthy movement towards a closer relationship—a movement which has been greatly accelerated by the periodical visits of the President and members of Council to the provinces, and especially the revival of the Annual Conference of representatives of all the societies. We do not so often hear the old-time criticism that the Institute is a London body which does not concern itself with the difficulties of country members, and the attention which the Institute has given in recent years to the provinces has created a stronger bond of sympathy and a growing belief in the need for unification—a belief which is in part due to the opinion that the provinces are insufficiently represented on the Council and that the President of the Institute should from time to time be a provincial architect. Surely such an aspiration is to be welcomed, and anything which is likely to promote unity encouraged, and the interest which provincial members have shown in the unification movement is a healthy and encouraging sign which should not be discouraged without the most serious consideration of the consequences. Has the Council of the Institute the sympathy and support of the allied societies in their anti-unification policy? We do not know, but we do know that some of the societies, at least, have expressed their views in no uncertain way. While we do not know, we have no reason to doubt that provincial opinion would be altogether steadied and any criticism of the action of the Council of the Institute would be silenced if the new Council would deal with those who are now opposed to them on unification, not as though they were the defeated opposition in a political election, but as men who are quite ready to take defeat like other Englishmen when their proposals have been before the electors and they find themselves in a minority. As a non-party journal anxious to promote the advance of the profession, the Institute, and above all the art of architecture, we hope the Council will give sympathetic consideration at the beginning of a new session to the opinions we have ventured to express. We are not suggesting that they should reverse their policy, but we do urge the Council to reconsider their decision, not in the cause of that unification which they do not desire, but for the sake of the *esprit de corps* which should prevail in all artistic and professional associations, and which, it seems to us, can only be obtained by the goodwill of all parties expressed and shown for the common good.

NOTES.

The President's Address.

THE address of the President of the R.I.B.A., on Monday last, reflected nothing that might suggest any important issues at stake in regard to the domestic policy of the Institute. We know they exist, but no doubt the President thought they were best ignored on such an occasion. Mr. Waterhouse has so great a gift in making interest out of any subject that we can imagine with what happy comment he might have dealt with the withdrawal of the code of professional conduct, for we are sure that he, in common with many of our leading architects, never needed it, and could hardly have missed it even before it was withdrawn. His comments, too, on the nice shades of method and feeling in regard to unification and registration would have been interesting, and, may we not also think, useful? However, he touched on various matters with unfailing interest, and even gave the impression to one of the great dailies that one might feel optimistic about the future of London. As a matter of fact there is not much room for optimism, for the development of London is too difficult and intricate a matter for much hope until we have a central controlling authority backed up by a large force of educated intelligent imagination.

University v. Town Planning.

AN interesting comment on the various points of view as to the development of London is to be found in Lord Haldane's reference to the London University site. He said he saw "a great many people were writing to the papers protesting against having the headquarters of the University there. Some said Kenwood, because the view was beautiful; others said Holland Park, because it would make the West of London look so well; others said the south side of the river, because it was near the County Council; others said Westminster, because it would increase the value of the adjacent property. All these were good reasons to those interested in town planning, but they were interested in University planning, and from a University planning, as distinguished from a town planning, point of view, the site where they stood that night [Bloomsbury] was the only site, because it was the intellectual heart of London."

Conservation of Old Buildings.

THE account of repairs at Rievaulx Abbey, given in this issue, draws attention once again to the special character of this class of work and the necessity for special training in those who undertake it. Most architects are brought into contact with old buildings and may learn to love them for their beauty, their history, or the human interest of their craftsmanship; but this alone will not constitute anyone a complete conservator or even a well-informed critic of methods of conservation. The modicum of repair allotted to some of our ancient buildings during the last century was often lamentably insufficient and ill applied. The insertion of a few bond stones or of superficial patches of cement pointing to a fissure that is opening in response to the movement of several hundred tons of masonry is palpably absurd, yet this is what had been done to some of the defects in the chancel wall of Rievaulx Abbey before it passed into the hands of the Historic Buildings Branch of H.M. Office of Works. Such attempts to disguise the symptoms of decay are treated with contempt by the great forces of destruction to which old and ruinous buildings are exposed, and the unfortunate architect under whose direction the work is put in hand is hampered in all directions by a totally inadequate supply of money, time, and other necessary facilities for the work. Possession of a knowledge of all the facts is an indispensable preliminary to adequate treatment, and to obtain accurate data and to classify them in a way that will be readily comprehensible to all who are called in to assist or advise on the repairs is a laborious, sometimes a dangerous, and generally a costly affair. The Historic Buildings Branch enjoys facilities in regard to these matters, and has amassed experience on the theory and practice of the subject whose value is recognised among all interested in conservation work.

The Architect's Signature.

SEVERAL letters have appeared in the Press on this subject, and there seems to be a general revolt against the convention that architects alone among artists must remain anonymous. We have ourselves referred to the absurdity of omitting any mention of the architect's name when, for example, a foundation-stone is being laid, but when we examine into the cause of this neglect do we not find that it is really because architects appear to like anonymity? An architect at present is afraid of looking foolish if he signs a building, say, with a small tablet let into the wall; he is like a schoolboy, afraid of appearing "sidy" before his fellows. We suggest that the R.I.B.A. should definitely announce that architects are expected to sign their buildings. Such a custom would add materially to the interest of our architectural works, especially in years to come when they will form part of contemporary history.

The "Golden Gates," Burghley House, near Stamford.
[These gates are the work of Tijou.]

The Architect's Dream.

If it is a good sign when the young see visions and the old dream dreams, we ought to welcome the journey into the realms of allegory and prophetic vision of the President of the Royal Academy in his address before the Imperial Industries Club. At the same time we must not let our dreams for the amenities of a better London neglect the human claims, and it appears to us that to put all the London railways underground for a distance of fifteen miles from the centre is to condemn the unfortunate business man to a worse state than before, and perhaps to put them finally under the ground themselves! We should like to have been advised of a relief from the noise and strident competitive activity of London towards a more dignified and composed metropolis, one less nerve-shattering and wasteful of life. Sir Woodman Burbidge, in some remarks made on the occasion, regretted that the President's vision did not show any of the important stores, which were "among the principal sights of our great Empire." Well!—once the cathedrals were.

Wrought Iron Gates, East Haddon.

[These gates formerly stood at the entrance to the gardens at Berrystead, Oundle, and are now re-erected at East Haddon.]

The Imperial Arts League.

The recent action of this League in regard to the Entertainment Tax on Art Exhibitions has proved very successful. It will be remembered how Major Ormsby-Gore fought unsuccessfully last year in the House of Commons against the continuance of the Tax, and this year, renewing the fight, was able to secure from the Chancellor of the Exchequer exemption from the Tax on admissions to the exhibitions of accredited art societies. It was only through the League speaking for the profession as a whole that the claim of the artists to be relieved from an injustice could be made convincing. What has been won is an admission of the Government that societies of artists are entitled to the same consideration as commercial associations working for the furtherance of trade. An association which is able to exert this influence for artists should receive their warm support and is deserving of all encouragement.

The Tate Gallery and Art

It is not a time when art, so much loosed from its traditional moorings, moves in a sea of various theories and fashions to accept too readily as of permanent value results which often reach the appearance of success only because the fashion of the time endorses them. And we think it undesirable, knowing the insecurity of judgment that waits on fashion, that pictures or other works of art should be placed in our permanent collections until after the expiration of a period of ten years or so. Popular reputations are made and also unmade in that time, and a more intrinsic and dependable judgment is then forthcoming in regard to their fitness. The criticism which assails the so-called freak pictures which have been introduced into the Tate Gallery raises issues of more consequence than whether in these particular cases the Directors have been well advised. Mr. Frank L. Emmanuel has given prominence to such issues in saying that the trustees are "mainly gentlemen whose names are linked up with those forming the little coterie of extremists or revolutionary critics, art masters, directors of picture-purchasing funds, and artists who have captured the official art posts in this country." We have before referred to the danger of officials losing touch with the public interest and becoming even an obstruction to it. Now that public opinion is aroused to the importance of the matter it is to be hoped that some reconstruction of present methods which encourage sectional aims will be taken in hand; and a check such as we suggest put on the purchase of works which time has had no opportunity to endorse.

The Press and Sculpture.

It is gratifying to note, a a result of the correspondence on the neglect of sculpture, in an account in *The Times* of November 4 of the unveiling at Holborn Bars of the Royal Fusiliers Memorial the name of the sculptor is given; and, in the same issue, which includes an account of the unveiling of the Ramsay Memorial in Westminster, we read: "And we must not omit to state that the tablet is the work of Mr. Charles L. Hartwell, A.R.A." This is as it should be, and if such recognition can be accompanied by the fuller realisation by the sculptor of the high claims of his noble calling, sculpture may take the place which its character deserves. There is another point in connection with this matter which has not been given the attention it deserves. We refer to the subject matter of sculpture, on which the sculptor should be consulted, and which is often imposed upon him though it is an integral part of his work. The very trite subjects we so often see presented are due more to the choice of committees little endowed collectively with inspiration than to the sculptor.

Inland Airways.

It will be a curious commentary upon our outlook generally if the severest blow yet received by the smoke nuisance proves to be, not its evil effects upon health, buildings, and vegetation, but its disturbing influence upon aviation. The smoke screens over London and Manchester must be severe handicaps to the new airway, and unless the intensity of fogs can be materially reduced it will be impossible to ensure a reliable service; time-tables cannot be adhered to if landing places are bathed in dense fogs, and if it is attempted to avoid these by moving the landing stages out of range of the fogs the main advantages of speed in transit from one town to another will, of course, be lost. Natural mists will be quite enough hindrance without the added delay and increased danger caused by banks of soot and sulphur. We hope that the pioneers in civil flight will join hands with others who, from different motives, are striving to get rid of the smoke plague.

GENERAL NEWS.

Lord Mayor of Sheffield.

Mr. W. C. Fenton, F.R.I.B.A., has been installed as Lord Mayor of Sheffield. He is the first architect who has filled that position in Sheffield.

Architect's Estate.

Mr. George Vickery, of Stradishall, Suffolk, formerly of Harrowlands, Dorking, architect, left estate value net personalty, £73,157; gross, £108,678.

Repin Exhibition in London.

For the first time in this country a collection of paintings by Repin will be shown shortly at the Leicester Galleries, Leicester-square. The artist will be represented by a number of characteristic paintings and drawings.

Wirksworth Church Roof.

Anxiety is felt as to the condition of the roof of the thirteenth-century parish church at Wirksworth, and the Parochial Church Council have decided to call in Sir Charles Nicholson in order to obtain expert advice upon the measures to be taken.

Wolverhampton War Memorial.

Admiral Sir Doveton Sturdee on Thursday last week unveiled at Wolverhampton a memorial erected in memory of local men who fell in the war. The memorial is a handsome obelisk in red stone, from a design by Mr. Armstrong, architect, of Bexhill.

Lockerbie War Memorial.

In St. Mungo Parish Church, near Lockerbie, a handsome bronze tablet, erected to the memory of the men of that parish who fell in the war, was recently unveiled by Sir R. W. Buchanan-Jardine, Bart. The architect was Mr. J. B. Dunn, Edinburgh.

Cruden Parish War Memorial.

The Earl of Caithness recently unveiled the Cruden war memorial. The design is by Mr. Bennett Mitchell, architect, Aberdeen, and the work was executed by Messrs. Bower & Florence, granite merchants, Aberdeen. The memorial takes the form of an archway in the parish churchyard, with panels on each side, on which are the names of the fallen.

Uphall Memorial Window and Tablet.

A memorial window and tablet to commemorate those men belonging to the parish of Uphall who fell in the war was unveiled recently in Uphall Parish Church. The window has for its principal theme the resurrection of Christ, with a mother kneeling in prayer, and was designed by the late Dr. M'Gregor Chalmers, architect, Glasgow, while the tablet was designed by Mr. J. Jeffrey Waddell, successor to the late Dr. M'Gregor Chalmers.

Huntingfield Memorial.

The men of Huntingfield who gave their lives in the war are honoured by a double memorial, one inside the church and the other on the village green. The memorial inside the church has taken the form of a complete refurnishing of the sanctuary, and that on the village green consists of a silver-grey Cornish granite Ionic cross, with a raised sword on its surface, the whole being on a tapering base. The architect was Mr. H. C. Hughes, M.A., A.R.I.B.A., of the Cambridge University School of Architecture.

Housing at Bargoed.

At a special meeting of the Gelligaer Council recently a letter was received from the Ministry of Health in reply to a letter from the council in regard to a proposal for the erection of an additional forty houses at Bargoed. The Ministry stated that in view of the time which had elapsed since the National Building Guild tender was submitted, and a further fall in prices since that date, fresh tenders should be invited, and these should be submitted to the Ministry in due course. The council thereupon decided to re-advertise.

The Architects' and Surveyors' Assistants' Professional Union.

The next item in the winter social programme of the A. and S.A.P.U. is a Cinderella dance, to be held at Australia House, Strand, on November 16, from 7 p.m. to 12 p.m. Fancy dress is optional. Tickets, price 6s. 6d. each (including refreshments), may be obtained from Messrs. Keith, Prowse & Co., Messrs. Munts, Ltd., or from Mr. J. A. Gould, Honorary Secretary of the Social Sub-Committee, 36, Victoria-street, S.W.1.

On November 7 the Metropolitan Branch of the Union held a dance at the Social Hall, Croydon, about forty couples taking the floor. Largely owing to the efforts of Messrs. F. J. Williams and C. R. Cathrow the affair was a great success, which it is hoped to repeat in the near future.

Obituary.

The death occurred, on October 27, at his residence, 37, Ringstead-road, Catford, of Mr. Henry Hopton, at the age of 75. He came to London as assistant to the late Mr. Charles Bell, and continued with him for many years as manager. He also did considerable work for Mr. Henry Lovegrove, and for some years prior to his death carried out several works in Catford, the chief being the branch library at Hither Green, for the Borough Council, and the Lewisham Maternity Home.

Mill Hill Barracks War Memorial.

The war memorial erected at Mill Hill Barracks to the memory of the 12,694 officers and men of the regiment who fell in the war is an obelisk of Portland stone, and occupies a site in front of the officers' quarters. It was designed by a former member of the regiment, Mr. J. G. Peacock, and was executed by Messrs. Foster & Dixie, Ltd., Chelsea. On three sides of the obelisk, which rises from a paved square with corner stones, the badge of the regiment, which embraces the plume of the Prince of Wales, is cut.

Dunkeld Cathedral.

A scheme for the preservation of the ruined nave and western tower of Dunkeld Cathedral is being undertaken by the Society for the Preservation of the Ancient and Historical Monuments of Scotland. The structure was handed over to the nation by the Duke of Atholl some time ago. In the work of repairing the building attention will be paid to the tower, which is marked on the west side by a zig-zag rent from top to bottom, due, it is believed, to an insecure foundation at the west corner.

Horfield War Memorial.

The Horfield Parish War Memorial, unveiled last week, takes the form of a crucifix shrine, beneath which is a tablet bearing the names of 62 parishioners who fell in the war. The whole, which is surmounted by a gilt canopy, stands some 8 ft. high, and is decorated with a variety of colours. It is the work of Mr. F. A. R. Woodward, A.I.O.B., 43, Southwell-street, Bristol, the architect being Mr. A. R. Gough, of Bridge-street. Mr. Hems, of Exeter, is responsible for the carved figure of Christ; while the painting is the work of Mr. Bell, of College Green.

Westminster Hall Roof.

Sir Frank Baines gave an interesting address on the restoration of Westminster Hall roof at the Institution of Mechanical Engineers on Friday evening last. Dealing with the decay of the roof, Sir Frank Baines, who has superintended the restoration on behalf of the Office of Works, said it had been going on continuously and was due primarily to the attack of the beetle, Xestobium tesselatum. The destruction caused by the beetle was so great that there were cavities in some of the huge oak beams in which a man could lie down. As the result of careful experiments, a preservative had been found which would arrest for many years the further depredations of the beetle. The whole roof was found to have dropped eighteen inches, and it was marvellous to think of that great structure, spanning 69 ft. and 240 ft. in length, dropping and adjusting itself without failure. The strengthening had been executed with steel members, which were so skilfully hidden as to be invisible from the floor of the hall.

Leplay House.

Following the tradition of previous educational tours arranged from Leplay House, Rome is to be the next centre of study. A party will be taken to Rome during the Christmas vacation, leaving London on either 26th or 27th December (nineteen days tour inclusive). The educational side of the tour is under the direction of Mr. Alexander Farquharson, M.A., who, with the assistance of experts on the spot, will give members of the party an opportunity of tracing out the history of Rome from earliest to modern times. Visits will be made to churches, palaces and institutions of every kind. For those wishing to specialise on classical Rome, a series of visits devoted to that alone is being organised. A further group to study Rome of to-day, with special reference to its educational, social and political institutions, is being arranged for. A course of lectures on the general history of Rome will be given during the tour. For full particulars application should be made to Miss Margaret Tatton, Director, Leplay House Educational Tours, 65, Belgrave-road, Westminster, S.W.1.

Bishop's Throne at Chelmsford Cathedral.

A bishop's throne to the memory of the late Bishop Johnson, Bishop of Colchester from 1894 to 1908, was dedicated, on October 19, in Chelmsford Cathedral by the Archbishop of Canterbury. The throne is of English oak, and consists of a lofty canopied seat with a carved prayer desk in front. The arms of the diocese of Chelmsford are carved on the back of the bishop's seat, with the arms of the late Bishop Johnson on the desk, and those of the dioceses of Rochester and St. Albans, the province of Canterbury and the county of Essex.

The Archbishop also unveiled and dedicated a tablet in memory of the sons of the clergy and the clergy of the diocese who fell in the war. The framework of the tablet is of oak carved and enriched with gilding, the lettering being on cast lead panels gilded.

The throne and tablet were designed by Sir Charles Nicholson, and made by Messrs. Bowman & Son, of Stamford, Lincs.

COMPETITION NEWS.

Hospital Architecture.

To obtain for the typical small community in America a hospital building which is at the same time efficient in arrangement and creditable in architecture, *The Modern Hospital* has inaugurated a competition, open to all architects. Premiums amounting to £1,000 are offered. The jury of award is to be composed of two architects, two hospital superintendents, and a graduate nurse who has had experience as superintendent of a small general hospital. The competition calls for plans of a general hospital of from 30 to 40 beds. Registration for the contest must take place on or before November 15, 1922, and the final date for submitting designs is January 15, 1923. The general programme of the contest may be had from *The Modern Hospital*, 22–24, East Ontario-street, Chicago. A copy of the conditions may be seen at *The Builder* office.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given): Birkenhead War Memorial (Dec. 29, Sept. 15); Port Said War Memorial (March 31, 1923, Sept. 29); Old Cranleighan Cricket Pavilion (Oct. 6); Vestibule design (Nov. 15, Oct. 27); Ryde Pavilion (Oct. 20).

THE COMPLEAT ARCHITECT.

BY DUDLEY HARBRON.

V.—CONSTRUCTION.

As materials and workmanship are the means, construction may be defined as the logical application of these means to a definite structural aim. Foundations seemingly dry and uninteresting, or wet and sloppy, are at the root actually and figuratively of sound architecture. The knowledge, therefore, of the bearing capacity of the various forms of subsoil is a necessary preliminary, and the nature of the subsoil is a governing factor in the edifice that reposes thereon.

The ancients laid their foundations well—at a depth below that affected by earthquake tremors, resulting in a capacity to resist—so that despite subsequent constructive mutilation of most of the monumental buildings of the old world fragments of many yet stand. There are preserved in their foundations, for after ages, the ground plans of those the superstructure of which has from varied causes disappeared. The need for repose demands that the super-imposed loads shall bear with equal pressure upon the supporting material of the same texture; it therefore follows that a more ample foundation is necessary for the heavier parts of a building. The mediæval builders were careless of this rule, and their inadequate foundations are as often to blame as the weak piers at the crossing for the incomplete central tower, one of the favoured landmarks of the English masons. As this question of the resistance of the subsoil is thus fundamental, it must be as a complete structural whole, commencing from the roof downwards, that a building is conceived.

The mode of roofing determines the distance apart of the supporting walls. The spacing of the piers, or buttresses, depending equally on the system of covering adopted, an edifice without a roof can hardly (despite Grecian theatres and Roman amphitheatres) be designated as a complete building. The manner, then, of bridging a void holds the greatest influence in architecture. There are two ways in which this has been accomplished: by the beam and the forms of truss that are akin to beams; by the dome and the arch, the last two being related through the semi-circular arch.

The particular characteristic of the beam is that at the point of support the load, which it has transmitted horizontally, descends vertically by way of the supports to the earth; while in the case of the dome or the arch there is an oblique outward thrust, calling for a counter-thrust to maintain the whole dome or arch in equilibrium. The ramifications of these two systems lie at the root of the architectural manifestations of the world, and though the legend of Mahomet's Tomb suggests that there are other means of bridging a void, we have yet to discover and apply them. In consistent building, the means used to roof a structure will be found employed in like manner to span those openings in the walls that are needed for light or as means of access. The method of covering affects that simple component the wall, which has in turn acted as a protection, as the sole support, and as a screen. The same form of wall cannot adequately satisfy any more than one of these demands. If it is protective, as the old enclosing wall of a city, it is altogether unreasonable as a screen and equally through the possible combinations. The only quality they possess in common is that they shall stand up, for prone they no longer function as walls.

A simple form of roof, whether truss or domical barrel vault, bearing equally along the entire length of a wall, requires in consequence an equal supporting mass for its entire length, but so soon as the load is applied at separate points the economy of a pier is evident. In trabeated construction and when the load takes the form of thrust, as it does in arcuated structures, the buttress usurps the function of the wall and the intervening space becomes inevitably a screen.

It is doubtless possible so to arrange the thrust and counter-thrust to such a nicety that, like a house of cards, the slightest puff will disturb the whole. But since durability is one of the attributes of architecture, a margin of safety must be left to provide against the consequences due to the external forces of wind and weather, inferior materials, and careless workmanship. This margin, on the one hand, has to avoid the pitfall of extravagant superfluity, and, on the other, of false economy.

The requirements of modern society are more complicated, and the restrictions more numerous than ever they were before; in consequence, the task of reconciling these requirements is more onerous, yet at the back of them all is the same necessary need for equilibrium and repose. Construction is the backbone of architecture. It is essential that sound, sane, scientific construction guide all that an architect does. It is useless erecting an interesting façade on faulty foundations—interesting façades are not so arrived at.

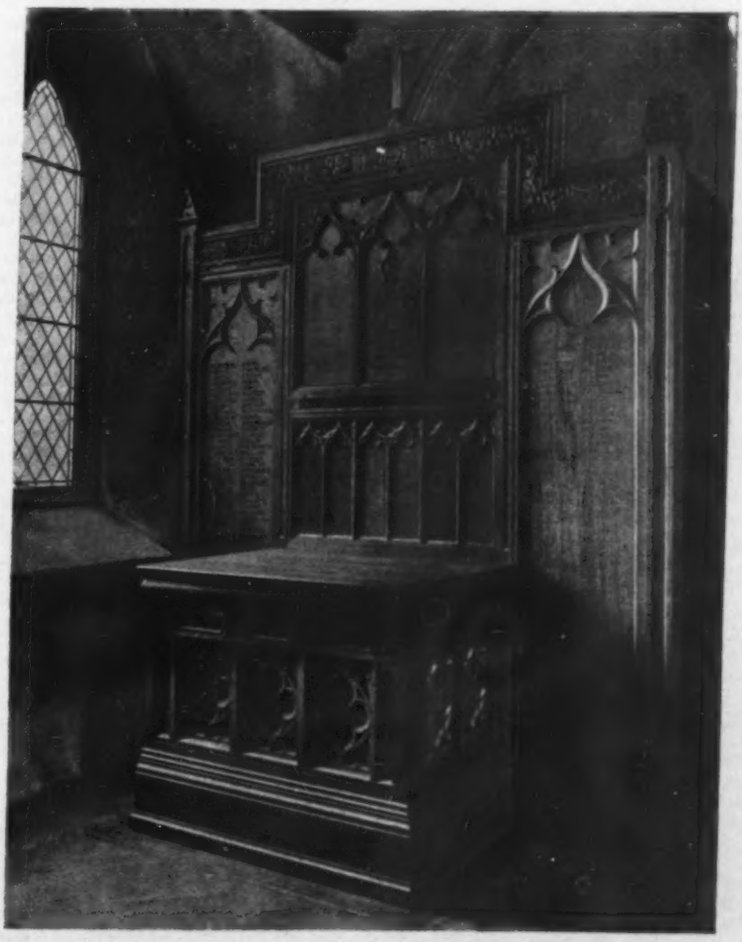
The nature of the site, the need of the building, are the primaries that dictate the construction—the bones. The fleshy covering in which it is to be clothed (not to hide its nakedness but to emphasise its salient features) should evolve as a secondary consideration. The fault of many buildings is that the style has dictated the construction, and the construction has had to be contorted to impracticable ends. City life, like city buildings, creates such supposed needs. But they should never be allowed to justify them. Sound construction should be the master, not the slave.

There are no features that do not arise from some imperative constructional need. And there are no needs that cannot be put to use as inspiring a feature; it is meaningless features that are the bugbear, betraying, as they do, a confused state of mind in their originator. The need to remove water from the roof, smoke from the house, slops from the sink, are, in the first place, constructive. It is the wit of man that has made them also decorative. Concealment is a vice, and thrusting forward of the inconsequent is not a virtue; it is the judicious assessment of the relative importance of office that, co-ordinated, leads to the perfect whole.

Many of the requirements of modern society have not yet had their corresponding effect upon architecture. Where the dominant need has been met without evasion, but with reasoned, balanced discrimination, modern building has nothing to be ashamed of. It is by the lingering glimmerings of false philosophy as applied to architecture that the decadence of modern architecture is evident. Flattering though it may be to their originators, it is no more architecture to copy a modern than an ancient building.

The situation, the needs, the cost, alone determine the treatment. It is the priceless privilege of the artist to weld these into an expressive ensemble. If construction is allowed to dominate one's mind, it is surprising how satisfying are the results, how many the opportunities for emphasis that they provide.

In the human face, the whole of the component parts serve very practical ends, yet in balanced nicety they result in the perfection of the human head. As the artist must realise what lies behind in seeming unattractive skeleton, so the architect, from insistent functional needs, can envelop in becoming manner the interior and exterior of a building.



All Saints' War Memorial, Newmarket. MR. L. E. COLE, A.R.I.B.A., Architect.

[The whole of this screen and altar is of selected Austrian oak; the raised platform is of oak parqueting with oak curb. The work was carried out by Messrs. Linzell & Edmondson, Newmarket, the whole of the carving being done by their foreman, Mr. Boyes.]

CORRESPONDENCE.

Bicentenary of the Death of Sir Christopher Wren, February 25, 1923.

SIR,—The first meeting of the Grand Committee will be held on Wednesday, November 22, at 4.30 p.m., at the Royal Institute of British Architects, 9, Conduit-street, W.1. The business of the meeting will be to consider arrangements for the Commemoration programme. The Grand Committee includes Sir Aston Webb, P.R.A., Mr. Paul Waterhouse, P.R.I.B.A., Mr. Andrew T. Taylor, Sir Lionel Earle, Sir Banister Fletcher, Sir Hercules Read, Professor A. R. Hinks, Mr. Mervyn Macartney, Dr. H. H. Turner, Major-General W. D. Bird, and representatives of the Universities of Oxford, Cambridge, and London, of the City of London, and of all the appropriate learned societies, guilds and schools.

Tea will be served in the Common Room of the Royal Institute at 4 o'clock.

IAN MACALISTER,
R.I.B.A. *Secretary.*

Bungalows.

SIR,—I am interested in the controversy in respect of the cost of a bungalow versus a two-storied house, and from my experience, which covers a very wide area, during the last eighteen years, I am of opinion that a bungalow is more costly than the two-storied house, roughly speaking, from 8 per cent. to 10 per cent. more, this comparing both as being equal in material and construction. If the bungalows are built with Bullock's "Bricko," lined with Poodle's "Poppo," or roofed with Musko's "Itsovitch," then I should say it is possible to build slightly cheaper.

I should say the main reasons for the increase in cost would be the additional brickwork, tiling to roofs, concrete to foundations, and drainage, which are the principal costly items of present building. I should not say much is saved on scaffolding, as the amount is increased longitudinally, instead of vertically, as "A.R.I.B.A." suggests. "ECCO."

Licences for Wooden Structures in London.

SIR,—Referring to my letter on the above subject, which appeared in your issue dated the 28th ult., in answer to several previous contributors: In one of the latter the implication was put forward that the present charges were out of all proportion to the cost of the building. I should like to point out that the Central Employment Bureau is not concerned with this point, and that all work undertaken by the unemployed members of the Bureau will be charged according to th scale of charges as laid down by the R.I.B.A.

I trust this statement will allay any doubt as to the intention of the Bureau, as administered by the Architects' and Surveyors' Assistants' Professional Union, which may have arisen in the minds of some of your readers.

JOHN MITCHELL,
General Secretary.
A. and S.A.P.U.

The Economics of Cooking.

SIR,—One of the aftermaths of the war is the reconsideration of the question of cooking apparatus for houses generally. No one can complain of lack of energy of manufacturers, both in connection with coal ranges and gas-cookers, and much has been written on the advantages of each for bungalows and small houses; but I should be glad of information on the matter in relation to a country house, where gas is available, with four reception rooms, one dining room (say, 22 ft. by 16 ft.), nine or 10 bedrooms (four or five maids being employed), servants' hall, and all heating of hot water by separate boilers. Is it really practicable for cooking to be done entirely by gas? Is the coal range, with large hot-plate, plate-rack, &c., after all, most serviceable and preferred by the cook; or is a combination of the two systems giving the best results?

"COUNTRY ARCHITECT."

EXHIBITION NOTES.

PICTURES BY LEONARD RICHMOND.

IT is always a pleasure to see signs of progress in the work of an artist, especially of one from whom we have hoped much; and there can be no doubt that the present exhibition of pastel drawings by Leonard Richmond shows increasing judgment and capacity. He is easily in the front rank of landscape artists and quite a prince of pastellists. Those who noted his first appearance with a quite remarkable gift of portraying brilliant sunlight effects may have had doubts whether he would be overpowered by the defects of his qualities and in a rather theatrical display of his keen perceptions. But he has kept himself in hand; the present exhibition shows the value of reserve in almost all the subjects. The breadth of broad luminous shade in some cases only tends to increase the brilliance of his effects, but, in some instances, we find a reticence of quiet grave colour which is singularly pleasing, and this is not because it is a mere negation of colour. We hardly, if ever, find a note of colour that jars, or that is lacking in value. In some of the drawings he has nearly outdone himself in brilliance, as in "Grand Rue, Mont St. Michel" (39), "A Street in Le Puy" (47), "Sunlight Siena" (14), or "The Villa Medici" (12). But surely Nos. 5, 16, and 27 are definite steps in the direction of gravity and reticence; the latter, "Late Afternoon at Bayeux," is a picture of pattern and colour that would never tire the most fastidious. One who understands so much as to the values of planes, tones, and colour would seem to have the world at his feet in the realm of landscape art. We have certainly much to thank this artist for, and we may now reasonably hope we shall have much more, certainly if he remembers that the worst foes are often of one's own household.

THE R.I.

There are about four hundred pictures at the R.I., but the proportion of noticeable work is, as usual, very small. A great deal of it is good enough to cause regret at the waste of ability, and wonder as to whether it was temperament or necessity which brought it forth. The interest of the experienced critic would probably be limited to some thirty subjects. "The Sound of Mull" (353) is a beautiful picture of a low sun shining over the purple hills and water; it is as good a thing as anything Julius Olsson has done and has charmingserenity and beautiful colours. A decorative seascape by E. Reginald Frampton (359), a fine picture of evening landscape by Frank Spenlove-Spenlove (297), and his moonlight study (277). A vigorous little nocturne by Harry Van der Weyden (109), and an arresting picture of the Derby, by Sir John Lavery, are to be seen in the South Gallery. Two or three good things are to be found in the West Gallery. "Denham Church, Bucks" (127) is an admirable picture by Leonard Richmond, and "The Solitary Upland," by E. Hesketh Hubbard, is one of the best pieces of landscape work we have seen, although the sky is, we venture to think, a little out of keeping with the upland, which is very ably rendered. The same artist is responsible for an admirable illustration of the interior of Alkmaar Church (33). "The Maas at Dordrecht" (21) is a powerful and harmonious seascape by Moffat Lindner. So admirably decorative is the picture of "The River Somme" (67), by Graham Petrie, that it ought to be translated into wood inlay by Rowley.

Aldwych and Kingsway.

Writing with reference to the article on "Aldwych and Kingsway" in our last issue, Messrs. Ewart & Son, Ltd., of Euston-road, inform us that the dome of the Gaiety Theatre is covered with copper on their principle, and not with lead, as stated. In mentioning the durability and lightness of copper they inform us that the copper roof of the Old Parish Church, Church-lane, Hampstead, has stood for about 100 years.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

THE first general meeting of the session of the Birmingham Architectural Association was held on Friday last week, at the Society of Artists' Rooms, Birmingham. Mr. Rupert Savage, F.R.I.B.A., the President, in the course of an address, dealing with the influence on architecture of popular opinion, said that architecture was one of the most important demonstrations of national character, and its achievement might be considered a reflex of popular sentiment. It must surely be a source of wonder to many that they were to-day unable (or unwilling) to emulate the great works of the past. The present generation did not realise the poverty of its environment. A sort of mean materialism frustrated all the efforts of the altruistic spirit. The poor modern building of the recent past seemed to have overlaid and effaced traditional work in most English towns in a greater degree than appeared in many Continental towns. Even in new and partly developed countries cities were being planned on an ambitious scale, and the inhabitants were quite conscious of their inheritance.

In this country, the great restraining influence on architectural design and town planning had been the worship of so-called "efficiency." They rightly demanded that their buildings and streets should be conveniently planned, but they showed great reluctance to make any sacrifice to mere beauty. A big effort had recently been made to improve the housing conditions of the working class, but in those undertakings the cult of ugliness prevailed. The responsibility for the past must be shared by the public and the profession. The public knew nothing of good architecture, while the architects were for the most part inadequately trained and educated. During the last few years there had been a marked improvement in both respects, but before they reached a satisfactory standard, two conditions were indispensable—public appreciation and professional efficiency. The ignorance and indifference of the public in matters architectural was largely due to lack of publicity. It was possible that editors might think that the public was not interested in the subject, but it should be remembered that the popular interest displayed in other arts was largely stimulated and developed by the criticism of the Press.

While preaching to their fellow-citizens they must remember that if they demanded increased confidence in themselves and respect for their art, they must do their utmost to deserve them. Much had been done in recent years to systemise and improve the training of young architects, but in order to further their efforts for professional improvement and to give the public that confidence which they desired, they needed some form of compulsory qualification, and they felt that that might best be attained by an Act of Parliament restricting the use of the title "Architect" to those holding a diploma from some responsible body, such as the R.I.B.A.

Their aim was not wholly selfish; they desired not only to gain public appreciation of their art and a better status for architects, but to hasten the abolition of all that was mean and squalid in their present environment and to encourage the gradual upbuilding of cities which should be worthy of a great nation.

A vote of thanks, proposed by Mr. H. T. Buckland, F.R.I.B.A., seconded by Mr. G. Salway Nicol, F.R.I.B.A., was carried.

Library Planning.

To such an extent has reading increased since the war that it is no longer necessary to take into account the nature and class of the residents of a neighbourhood when considering the planning of a library. Space must now be provided on a much more lavish scale. In an article in *The Librarian* for October, it is stated that present-day requirements are in the ratio of one book to every three inhabitants, rising in, say, twenty years, to one and a half inhabitants to each book.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS AD·1834

THE President, Mr. Paul Waterhouse, M.A., presided at the opening meeting of the session held on Monday evening. There was a large attendance of members.

The PRESIDENT, in the course of his inaugural address, said it was customary to have a subject, but why it should be called a subject he did not know. If a subject was a thing or person in subjection, the word was inappropriate to the theme of an address. For, so far from being the obedient servant of the speaker, it was his tyrannous master, or if in any sense beneath his feet it was as a devil-possessed carpet beyond whose borders he dare not tread, and whose pattern was a kind of maze that regulated his dance. So if that evening he seemed more of a wanderer than the keeper of a beaten track, his excuse was that, relying on the derivation of the word subject, he meant to keep the thing in subjection. London was ever with them. Architecture was ever with them. The two were but synonyms for mystery and charm, for doubt, hope, wonder, and infinite consolation. No traveller could help comparing his London with other capitals; and if, as was happily true, he always came back to London to find a welcome and to realise fresh beauties, he none the less was aware that there were some things in which London fell short of the spirit, the habits, the ideals of other places.

Paris and London.

Some while ago there was a debate as to what should be the motto of the London County Council armorial bearings. His own suggestion was "Keep off the Grass." In suggesting it, he suggested no reflection on the County Council itself, but rather on a spirit which seemed to threaten all those who found themselves in charge of their town. It was a spirit which, happily, was on the wane, and he believed that the County Council itself was contributory to its gradual extinction. He hardly knew how to define it except by example and analogy. The simplest example was Paris. Paris, like them, had a river—a wilder, larger, less tameable river. But would anyone believe, who had not seen it, that in spite of embankments in solid masonry, higher and even more solid than their own, big trees of forest growth grew between the embankment and the river's edge. Those who had seen those trees and that shore knew also that men might, and did, go and fish on that river bank, and that the parapets of the embankment were beset—he might say decorated—by a mile of bookstalls. Here were two things impossible in their London: the permission given to a great rural force to continue the force of its rural nature in the heart of town culture, and the permission given to the free-lances of an ancient trade to ply their business otherwhere than in orthodox shops.

He knew all about the excellent reasons which governed their behaviour, and all the sensible arguments which could explain it. "The Thames banks are muddy, not shingly;" "access to the water leads to suicide and accidents;" "trees wouldn't grow by the water's edge;" "our river is tidal, theirs isn't;" "irregular trade once permitted would extend all over London." But all these arguments were not really to the point; the fact was (and they knew it) that if they woke up one morning and found that the Thames had become the Seine, they would have those trees cut down, they would send those fishermen to the police-court, they would close the access to the banks, and Parliament itself would legislate for the removal of those bookstalls. And why? Simply because the whole thing was too free and easy for their ideas of propriety. The fact was, he supposed, that they had a kind of protestantism or puritanism in their ideas of town propriety, and they certainly cherished (avowedly or not) a sense that there was a normal kind of rigour which suited a town, out of which country (which was to them a sort of abnormality) must be excluded. That was why their suburbs were largely hideous.

Put it another way. Paris was a large—a very large—country town. London, however much they were to reduce its size, could never be a country town. It did not differ in degree, but in kind. Richmond Park, barring a certain superfluity of railings, might be looked on as being almost a miracle. That anything so like untouched nature should exist so near London was almost scandalously delightful. It was, he supposed, about the limit. Imagine another night-time transformation: conceive Richmond Park taking the place of Hyde Park. What would happen in the morning? He thought it would be at once closed for necessary alterations. Versailles was the same distance from Paris that Hounslow was from London. Drive from Versailles to the capital through St. Cloud, and they would not dare to tell him that the miles of unfenced woodland through which they passed would be permitted on the Hounslow-road. There was undergrowth in the Bois de Boulogne, literally undergrowth. If it were to spring up in Regent's Park what would happen? Miles of unclimbable iron hurdles, and a penny on the income tax to pay for them. The man, if there was one, who had walked along the banks of the Regent's Canal from its harbour mouth to the Great Central goods station; the men who went into Neville-court trembling for fear lest the great and tender treasure there were gone; the few who had found the one only spot on the Middlesex side of the Thames where one could wet foot on the river's edge: those men would know what he meant by that little touch of unrestraint which, with the best intentions in the world, they smothered. If they had ever made a water-colour sketch of St. Mary's Church, hard by the apparently prehistoric dyke which was really the North sewer outfall; if they had ever gazed at the cattle on the Becktonroad flats: if they remembered the Piranesi-like wonder of St. John's-square, Westminster, in the 'eighties, or had been unable to tear themselves from Clerkenwell-green, they would know what he meant but could not express.

There were great times coming for the Surrey side. The County Council office—which he frankly admired—was a pledge of that. The planning of that shore territory had got to be dealt with by somebody, or by some "body," or by chance. May it come to pass that whether the task was entrusted wisely to an individual or expensively to fortune, the result may contain some elements of that freedom which was a joy to poets, and inspiration to artists, and an aid to life. Region-planning made one think of axes—not axes to grind, but axes of alignment. He supposed the most famous of axes was that which, starting from the statue of Lafayette, did an unbroken flight of two miles to the Arc de l'Etoile, which, though its visual existence ended there, started afresh for a four-furlong run to the Porte Maillot, and having there reached the boundary of Paris, took breath for another 2,000 yards along the Bois de Boulogne, and, to show that it was not exhausted, did a gratuitous rush of nearly a mile to a mound on the farther side of the Seine. They could not do such things in London—perhaps they did not want to; but there was no reason why they should make such havoc as they did of some of their small opportunities. It was an ill business hunting for uglinesses in their dear London, so he would give only a hint or two. A pair of the best statues in London, that of the agricultural Duke of Bedford and the classic figure of Charles James Fox, faced one another at the distance of a street which was 250 yards in length. At or near Fox's effigy common necessity called for the existence of a lamp post and a swan-necked stand-pipe for feeding water-carts. Mere stupidity would suggest that one or both of these blemishes should be placed on the axial line; rather less stupidity would have placed one horror clear of Fox to the right, the other to the left. Stupidity *in excelsis* would naturally rise to the idea of placing both so as to obscure the view of the toga-robed statesman, each within a foot or so of the axial line. Should he confess that it was stupidity *in excelsis* that won the day. It was rather pedantic to suggest that statues served no purpose but to be seen. Nevertheless he did suggest it.

Acoustics.

When the Guards' Memorial in St. James's Park was first proposed the scheme was let loose on the public by means of an article in the *Times*, accompanied by a careful-looking plan. That plan clearly showed that the intended monument, which was of ridiculous lateral extent, was to be so placed that the view through the Horse Guards archway would permit the vision of one side of it only. He wrote to the *Times*. The author of the illustrated article at once replied that it was a well-known fact that plans accompanying articles of that kind were not drawn to scale. He (the President) admired his powers of defence. It was the judicious observance of axial lines that gave charm to neighbouring non-axial arrangements. An axis all but respected was of no more æsthetic value than a catch missed in the deep field. A word of his let fall just before about the County Council House set him thinking of acoustics, and he coupled the two ideas without any but the most sympathetic thought for Mr. Ralph Knott. He would never blame any architect for an acoustic failure in the present year of grace, but he trusted that in a year or two's time such failures would be deserving of blame. He was in hope that members of their Institute, in consultation with experts in sound-law, would before long reach such an interchange of national experience as would elevate their present groping insecurity into the region of scientific certainty. He once built a committee room which was to be a model of acoustic excellence. Into it he crammed every device known to the handbook of that age as leading to perfect sound conduction. What was more, he cut out of it every known cause of acoustic disturbance. The achievement was a triumph of failure. As cures curtains were only the slightest of alleviation, eight electric candelabra united by chains seemed, instead of baffling the sound waves, positively to vibrate to the voices of the outraged committee men. But peace came at last by the purchase of an 80-guinea carpet of thick pile. He knew, probably they knew, that a pulpy wall-paper went a long way to remedy the trouble, and he was himself experimenting—on a real building, worse luck—with a system of roughened surface.

But, after all, the best buildings for sound seemed to be those in which echo was made their friend and not their foe, buildings in which, as in the old Exeter Hall, echo was timed to reinforce every syllable instead of fighting for dear life with the succeeding one or possibly with the next word. He looked forward greatly to more light on that ancient bogey. It was amusing to note that the correspondence in the *Times* on the subject floated away from the topic of their acknowledged darkness not to light, but to the confused noise of scientists belabouring one another on the general nature of induction from observed phenomena. During his past year of office the architectural waters of Edinburgh

and London had been stirred to their depths by three commotions, one in the northern capital, two in the south. The Edinburgh storm was an affair of tramway wires. Those who had wandered about Edinburgh in early dawns would have regretted in recent years that the trafficless quiet of the twilight was disturbed by a noise as of the clucking of innumerable hens. That was produced by the ceaseless toil of the underground cables chafing under enforced idleness and waiting for the far noisier burden of the tramcars. Lured by the wish to be rid of that hindrance to poetic thought—or by other wishes—Edinburgh decided for the abolition of underground traction, and pending the invention of a "wireless" system the municipality found itself faced with the problem of wire suspension. He was asked to join a movement for protesting against the attachment of the wires—or rather of the wires that supported the wires—to buildings, on the ground that the so-called "rosettes" or attachment blocks were outrages against architectural decency. The alternatives to rosettes were posts. Now, tramway posts were of two kinds. One sort, when disposed for duty, looked, unfortunately, like a random accumulation of sanitary vent pipes; the other sort was tainted with wrought iron of the kind which owed its prestige solely to the fact that in Victorian days there was a crusade—quite unmerited—against cast iron. In order to make up his mind on that subject he adopted the line that a question of æsthetics could sometimes be as well decided by the eye as by the brain, so having heard that both rosettes and posts could be seen in full bloom at Leith, he went to Leith. There the question decided itself. He had to choose between yards of municipal "art" scroll-work and a small slab of practical metal. He chose the latter and had, he believed, all the best people in Edinburgh against him. He had never differed from a single Scotsman on any subject before.

The Bank of England.

London's two thrills had been the Bank of England and Higher Buildings. No one in that room needed any enlightenment upon the nature of those two problems. To take the Bank first. He might explain that it was solely as their President and as the assumed representative of a certain aggregate of cultivated—he didn't say cultured—opinion that his view on the subject was sought and published. The facts as he saw them were very simple, though the problem was very complex. The Bank, a very beautiful and greatly beloved building, was too small—vastly too small—for the Bank's business. The Bank's business was of admitted importance, it was, in fact, of such great and national importance that the business man's answer to the problem, viewed without relation to the pleasures and affections of the heart, would be, "Rebuild the whole thing from the ground and from far below the ground." But they could not, in a decent country, view even money matters wholly apart from those "pleasures and affections." Next there came two very interesting factors in the case. The site of the Bank was so consecrated by sentiment, necessity, convenience and habit to the Bank's business that any idea of abandoning the site and choosing a new centre was entirely out of the question. Moreover, were that course adopted they would have to face the further problem that the abandoned buildings would have to become one of three things: (1) The home of some tenant whose needs they would fit unaltered; (2) the home of a tenant who would alter them; or (3) an historic monument. The first was unlikely, the second would be disastrous, and the third was contrary to the spirit of architecture.

What he called the other factor in the case was brought about by the low height of the Bank buildings. The raising of the walls on the frontages to anything approaching normal city height would lead to interference with the prescriptive rights enjoyed by ancient light owners in all the surrounding streets. That apparent disability was really a help towards the harmonising of contending motives. The Bank must increase in size, it must remain *in situ*, it must not violate its well-known architectural countenance, it could not easily or reasonably heighten its exterior walls, but it could, and he should say must, build buildings of increased height inside the *enceinte* with which the genius of Soane engirdled it. That there should be a necessity for altering any of the internal courts or any of the interior halls and rooms which were part of its beauty was indeed deplorable, but the deplorers of such internal change were but a millionth part of those who would or should suffer by any destruction or mutilation of the exterior. The right rule appeared to be that the whole of the engirdling wall should be left undisturbed, expressing in the future as it did express to-day the very spirit of protection or custody, and that if it was impossible to retain unchanged any of the open courts which were among the less known beauties of the interior there should, at least, be preserved as many as possible of the banking chambers which aligned the frontage to a depth of some forty feet, leaving the new higher buildings to rise at such a distance from the façades as to render them a kind of keep within the castle. For his own part he deprecated the superposing of any upper growths on the frontage walls themselves, feeling that what Soane designed as horizontal and self-sufficient should not be made a substructure to any upward composition, however ably designed.

The Higher Buildings Problem.

And now, with their leave, a word on the Higher Buildings problem. The opinions even of individual architects differed on that subject, but the Institute as a general body spoke on the matter in terms which were as remarkable as they were unmistakable. Why remarkable? Because architecture was an art whose business it was to clothe utility in beauty. What did their motto say, utility for the citizens, beauty for the city? It was their business to balance the utility and the beauty lest either should over-weight the scale. When a man was faced in those balancing exploits with a difficult decision, it not infrequently happened that a coin or two in one scale or the other would help the mind's decision. The Institute's mind must have been fully open to the fact that if it were to throw its influence into the Higher Buildings cause it would undoubtedly open the way to increased opportunities of earning money. In other words, every self-interested motive lay for architects on the side of Higher Buildings. Now the President was the one man in the Institute who did not normally vote, and he did as little as he could in the way of influencing others, so that, perhaps, he might, without indecency, say what he thought about a vote taken in his presence; and he took that opportunity of saying (naturally without any reflection whatever on those who voted in the well-meaning minority) that the decision given by that body against the promotion of higher buildings in London was a remarkable and very high-minded example of truth to artistic purpose in face of very cogent and material counter-arguments. He did not wish to be misunderstood. It was not a question of moral right and moral wrong with money on the Devil's side. It was a question of æsthetics in a very broad sense, and the side which was willing to sacrifice opportunity for an ideal won.

The Portrait of the Past President.

It was by virtue of his claim to speak without a fixed subject that he sprang from Higher Buildings direct to the portrait of Mr. John William Simpson. Their intention, in the series of portraits to which that painting would belong—the series was already assuming the proportions of a respectable picture gallery—was to acquire, often, he feared, at the cost of some generosity on the part of their good brothers the painters, a collection of first-rate works of art as first-rate memorials of architects who should be and might be first-rate. Happily it had been their good fortune up to the present moment to be able to offer as sitters to the portrait painter men whose achievements and fame had been worthy of his work. Their distinguished brother-architect, Mr. Simpson, retaining during his years of presidency some traces of that modesty which it was the obvious duty of a president to set aside, might probably have been prone to decry his own claims. It was their pleasant duty that evening, in welcoming his portrait, to welcome him also to that familiar gathering and to assure him of their pleasure in taking possession of so good a representation of so good a president. Having regard to that modesty which since his departure from the chair he had been at liberty to resume, he (the President) would be careful of what he said, but as his successor and as a member of his Council, he supposed he was as well qualified as anyone else to speak of the unceasing vigour of his work for the Institute. The Council could never have had a better chairman. His conduct of debate was always firm and fair, his treatment of difficulties always judicious. But those were merely domestic qualities. Mr. Simpson went much beyond them. His constructive policy was bent upon the improvement of the Institute's position, and they knew with what enthusiasm and zeal he laboured in a line of action which many of them thought it dutiful to advance. Nay more. Mr. Simpson, before, during and since his presidency, had always had at heart the relationship which should exist between English architects and those of friendly countries on the Continent. Equipped with special gifts of intercourse with France, they acknowledged him as the father of that Franco-British union which had already brought the priceless gift of friendship to many men on both sides of the Channel.

Again, they knew and realised that during those years which seemed to be devoted almost exclusively to the affairs of their Society, Mr. Simpson was blessed and encumbered with the cares and pleasures of a large practice. How a man with the handicap of several months of ill-health was able physically to cope with so many duties all generously fulfilled was more than some of them could understand. But the task was accomplished, the health was happily restored, the rest—if the renewal of increased professional work could be called rest—was won, and if Mr. Simpson should prove to be the last to whom the honour of belonging to the present series of portraits was accorded, he would have the satisfaction of knowing that he had won his position on the line not merely by the great skill of the painter but by his own deserts. In thanking Sir Arthur Cope for the brilliant performance of his task—and it was his (the President's) wish to move a formal vote of thanks to him—they welcomed the new possession as the presentment of one who, besides being a gifted and very productive architect, showed during his year of presidency, and, indeed, in many other years, a dutiful devotion to the Institute, and an initiative in that devotion which had been the admiration of his friends, the despair of his rivals, and the encouragement of his successor.

Discussion.

The portrait of Mr. J. W. Simpson was then unveiled, and MR. SIMPSON, in seconding the vote of thanks to Sir Arthur S. Cope, R.A., said he had given them a beautiful example of his work, and they would be proud to hang it with the masterpieces of other great painters which they already possessed. The portrait was a striking example of the truth that the value of a work of art depended not upon the subject but upon the treatment of it; he was only too conscious of how far he fell short of the ideal.

Sir Frederic Kenyon, K.C.B., in moving a vote of thanks to the President for his address, said that one task which, he thought, fell to the President and to all holders of his office, was to cultivate the sense of tradition in British architecture. As a member of the public he was rather confused by the multitude of counsels which were offered to them by art critics and artists of various kinds. One did not get the guidance in respect of a sense of tradition which one ought to get, and he believed that the difficulties which beset architecture, as well as other arts, largely arose from a lack of tradition, which was also a lack of guidance to the public. There were, he thought, two sets of conditions which would produce fine artistic results. One was when there was a widely spread, deeply seated sense of style in the public and artists, as had been evidenced in certain periods in the past, such as the Gothic revival and the Italian Renaissance, when by a happy gift of Providence there was a great sense of style in artists and also in the public who saw and criticised their work. That was a thing they could not get by asking for it. It seemed to him that one of the chief difficulties and defects in English art was that they were in an unsettled frame of mind, and the public did not know what to think and did not get the guidance that it should. What he would like to see would be a revival of the atelier system, in which the masters of craft, whether painters, sculptors or architects, were followed by bands of pupils who learnt from them and studied their ways before setting up for themselves. He believed that that would at once strengthen their art and steady criticism. Supposing that the leading living architects had each a band of disciples who followed and were proud to follow them, then they would get three or four or more main currents of artistic development, each of them with a responsible lead at the head and each developed along particular lines of thought. He believed that there would be no sacrifice of independence on the part of the followers and the pupils would receive from the masters a sound training in craftsmanship and artistic ideas, and would be free to develop them according to the dictates of their own genius. It seemed to him that as a result of English independence people were afraid of ranging themselves as the followers of anybody in fear of being accused of sacrificing their own individuality. That had not been so in the past. If they had something of the kind then the public would get the proper guidance in artistic thought. Instead of scores and hundreds of advisers, none thinking quite the same thing and inclined to criticise one another, they would have several main lines of development and could choose between them and they would, at any rate, be led to think along artistic lines. He hoped that the Institute, under the guidance of the present President, would continue steadily to develop artistic thought in architecture, and in thanking the President for his interesting and suggestive address, he would ask him to consider those suggestions.

Sir Francis Newbolt, K.C., seconded the vote of thanks, which was cordially carried, the President briefly acknowledging.

Associates' Committee Dissolved.

At a meeting of the Associates' Committee, held at the Royal Institute of British Architects in October, it was agreed that:—"Having regard to the fact that the Main Committee on Unification and Registration had been dissolved, no useful purpose would be served by the continuance of the Associates' Committee, and that it should therefore notify the general body of Associates, by whom it was appointed, of its dissolution, and inform them at the same time that the results of the Committee's labours could be seen on application to the Secretary, R.I.B.A."

R.I.B.A. Special War Examination.

Candidates may sit for this examination, which will be held from December 11 to 14, in London, Liverpool, or Leeds. The method of conducting the examination has been revised. There will be no oral examination on the day following that on which the work on the design subject is completed. At the close of the examination on December 14, the designs of all candidates will be forwarded to London for consideration by a special jury of the Board of Architectural Education. The jury will have discretionary power to call any particular candidates to an oral examination which will be held in London only at a later date. These candidates will be required to bring their approved testimonies with them to the oral examination.

Exhibition of Architects' Working Drawings.

An exhibition of Architects' Working Drawings will be held in the Galleries of the Royal Institute of British Architects from November 8 to November 22. The Exhibition, which will be open between 10 a.m. and 8 p.m. daily (Saturdays 10 a.m. to 1 p.m.) includes drawings kindly lent by:—

Mr. A. J. Davis (Royal Automobile Club).

Mr. E. Guy Dawber, F.S.A. (Eyford Park, Gloucestershire).

Sir Robert Lorimer, A.R.A., R.S.A. (Chapel of the Knights of the Thistle).

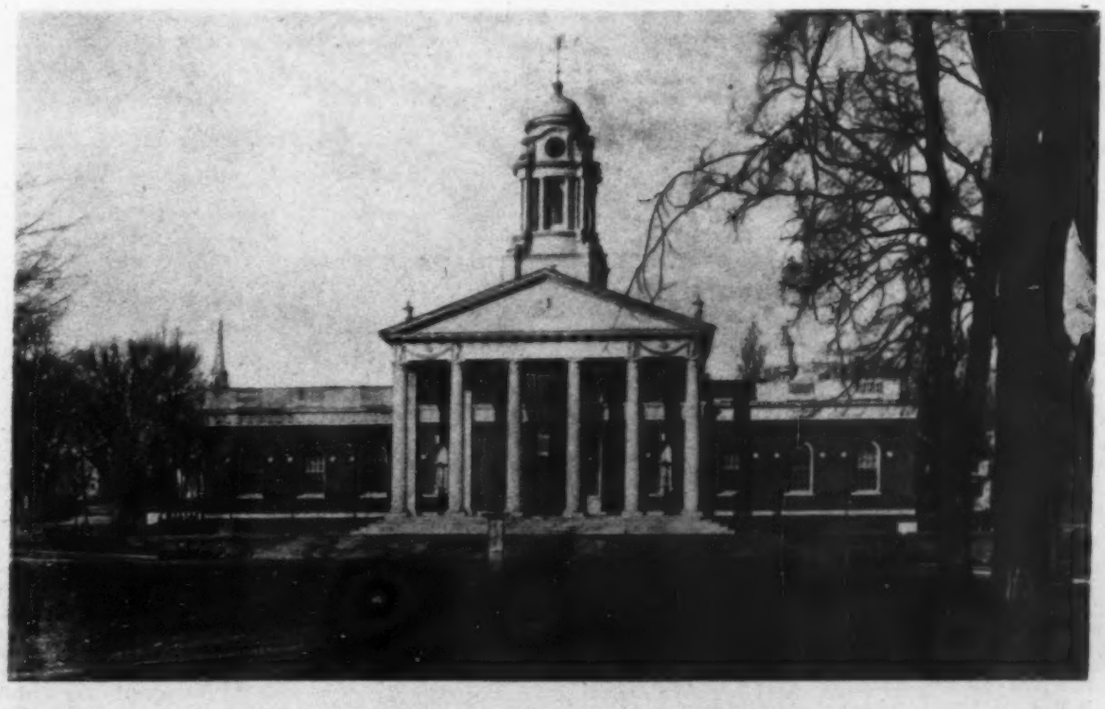
Sir Edwin Lutyens, R.A. (Imperial Delhi), (Hampstead Garden Suburb).

Mr. G. Gilbert Scott, R.A. (New Catholic Church, Northfleet), (Memorial Chapel, Chester Cathedral).

The exhibition is intended primarily for students of architecture; they will be able to examine the drawings that a practising architect hands to a contractor and thus will be afforded an insight into the methods adopted in a modern architect's office. A special students' evening will be held at the Exhibition on November 17, at 8 p.m. The architects who have lent the exhibits—or their representatives—will be requested to be present in order to explain the drawings to students.

Bristol Aid for Bethune.

A fund is being raised by the Lord Mayor of Bristol to provide a certain number of houses as a gift to the war-stricken inhabitants of Bethune. In consultation with the Lord Mayor's Committee, Mr. W. H. Watkins, F.R.I.B.A., of Clare-street, Bristol, has prepared plans gratis for the proposed houses. Mr. Watkins' scheme groups the houses in a picturesque quadrangle, with a lawn in the centre. Each side will be a separate unit, and the dwellings themselves will be of two types, some being semi-detached houses, and the others blocks of flats. In the centre bay of each of the end blocks facing the roadway will be placed a commemorative tablet bearing the Bristol arms, and an inscription setting forth the origin of the gift.



Town Hall, Milford, Connecticut: Front Elevation.
Messrs. Tracy & Swartwout, Architects.

LEADING CONTENTS.

	PAGE
THE R.I.B.A. AND ITS POLICY	687
NOTES	688
GENERAL NEWS	690
COMPETITION NEWS	690
THE COMPLEAT ARCHITECT	691
CORRESPONDENCE	692
EXHIBITION NOTES	692
BIRMINGHAM ARCHITECTURAL ASSOCIATION	692
R.I.B.A.	693
RIEVAULX ABBEY, YORKSHIRE	703
OPEN AIR SCHOOLS	707
UNIFICATION AND REGISTRATION	710
TOWN PLANNING	710
HOUSING AND TOWN PLANNING NOTES	711
THE BUILDING TRADE	712
NOTES ON VENTILATION	713
ELECTRICITY CHARGES FOR SPECIAL PRIVATE PURPOSES	714
NEW INVENTIONS	715
NEW BUILDINGS IN LONDON	715
LAND FOR WATER BOARD UNDERTAKINGS	716
CONTRACTS, COMPETITIONS, &C.	717
NEW BUILDINGS IN SCOTLAND	719

ILLUSTRATIONS.

The Wembley Hill Garden Suburb.

The type of house being erected at this new garden suburb is the outcome of an endeavour to combine attractiveness of grouping and detail of exterior with an equal regard towards economy of construction to meet the demand of to-day. It has been arranged to group the smaller type of house at one end of the suburb; some of the smaller houses are illustrated in this issue. The elevations, which it is proposed to keep more or less uniform in style, are of hand-made plum-coloured and red bricks. The roofs are all covered with Roman pattern roofing tiles.

The strictest regard for economy has been exercised in the construction of houses so that the owners have been able to sell them, freehold, together with the gardens attached, at the price of £800. The general contractors for the scheme are Messrs. Callow & Wright, Ltd., 207, Brondesbury Park, N.W.2. The architect was Mr. Oliver Hill.

Two Board Rooms.

Stafford House is built on a triangular site. The somewhat acute angle at the corner of King William-street, and the necessity for placing the board room in a central position in the offices of the British Australian Wool Realisation Association, Limited, on the second floor determined the elliptical shape of the room. The colour scheme is in William and Mary green, with curtains and other hangings of golden brown corduroy velvet with appliqué border.

The general contractors for the suite of offices on the second and fourth floors of this building were Messrs. Ashby & Horner, Ltd., and Messrs. G. & A. Brown, Ltd., of Hammersmith, were responsible for the panelling and decoration of the board room.

Park House, Westminster, was formerly a block of office suites, and during the war was occupied by the Ministry of Pensions. Messrs. Mather & Platt, Limited, ultimately acquired the building as their London office, and a complete remodelling of the interior was undertaken. The board room was formed by the conversion of two of the former rooms into one, and the decorative treatment shown was introduced to modify the somewhat unfortunate arrangement of the beams and windows existing.

Messrs. Walter Lawrence & Son, Ltd., were the general contractors for the remodelling of the building, and Messrs. G. & A. Brown, of Hammersmith, were responsible for the decoration of the board room. Mr. Sydney Tatchell, F.R.I.B.A., and Mr. Geoffrey C. Wilson, A.R.I.B.A. (Bourchier, Tatchell & Galsworthy) were the architects.

Ypres League Hostel.

The plan provides a homely club-house attached to a Memorial Hall and is intended for the use of members of the League. Its object is to give tangible form to the objects of the League and keep green the memory of the defence of the Salient and those who fell in that area.

The scheme proposed includes an information bureau, a comfortable home for those who desire to spend a quiet period near the graves of their relatives, and endowed accommodation for such as are not in a position to bear the personal expense of an occasional visit to the graves. The design follows closely an old Low Countries example to fall in line with the tradition of the place. The architectural qualities of quietude and modest dignity are called for by the purpose of the building and sought in the façade. The architects are Messrs. Nicholas & Dixon-Spain.

Restaurant, Exeter.

The entire building consists of dining hall on basement with galleries on ground and first floors (as illustrated); kitchens on top floor; and a side wing, over Lloyds Bank, of ballroom and residence flat. The plaster friezes are modelled in strong relief and enriched with gold-leaf and transparent colours wiped off on the high lights.

The whole of the plasterwork was carried out by Messrs. Bankart, Jackson & Sons. The joinery was executed by Mr. Robert Waycott, of Paignton, and is of Austrian oak, toned to a silvery grey. The contractors were Messrs. Stephens & Son, of Exeter, and the architects were Messrs. Hyams & Hobgen.

MEETINGS.

FRIDAY, *November* 10.

Kensington Council of Social Service.—The Rev. H. T. Carnegie on "Overcrowded Houses in Kensington." At Aubrey House, Campden-hill, W.8. 5.30 p.m.

MONDAY, *November* 13.

The Surveyors' Institution.—Presidential Address by Mr. J. M. Clark. At 12, St. George-street, S.W.1. 8 p.m.

Royal Society of Arts.—Mr. John Slater on "The Strand and the Adelphi in Ancient Times." At John-street, Adelphi, W.C. 8 p.m.

TUESDAY, *November* 14.

College of Estate Management.—Mr. E. H. Blake on "Domestic Sanitation." At 35, Lincoln's Inn-fields, W.C. 5.30 p.m.

WEDNESDAY, *November* 15.

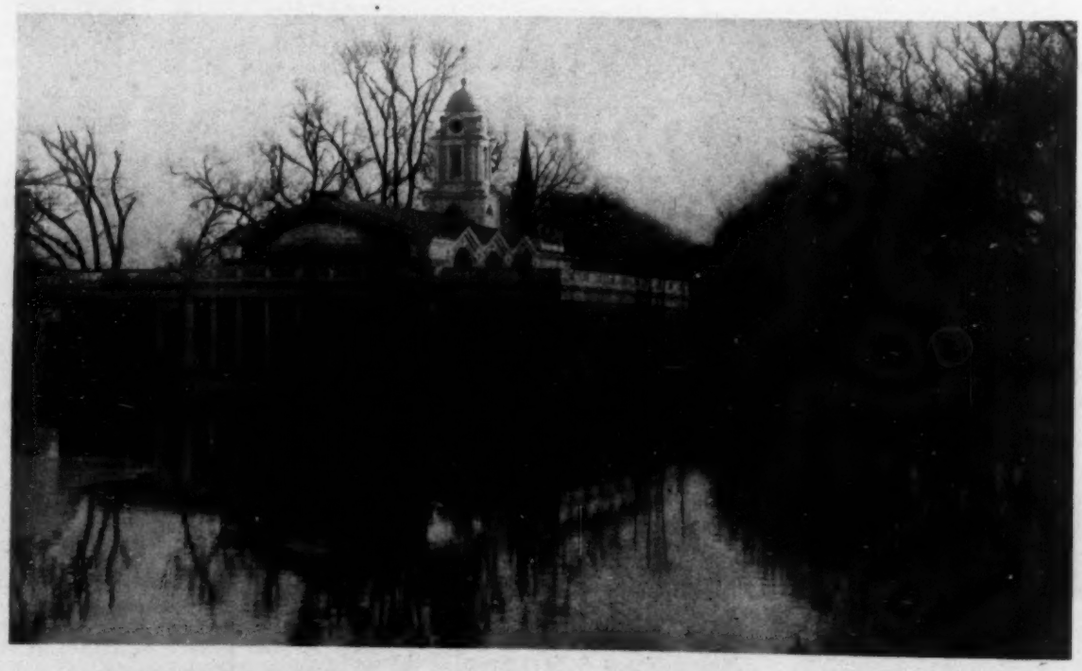
Royal Academy.—Professor A. P. Laurie on "The Preservation and Cleaning of Pictures." At Burlington House, W. 4 p.m.

THURSDAY, *November* 16.

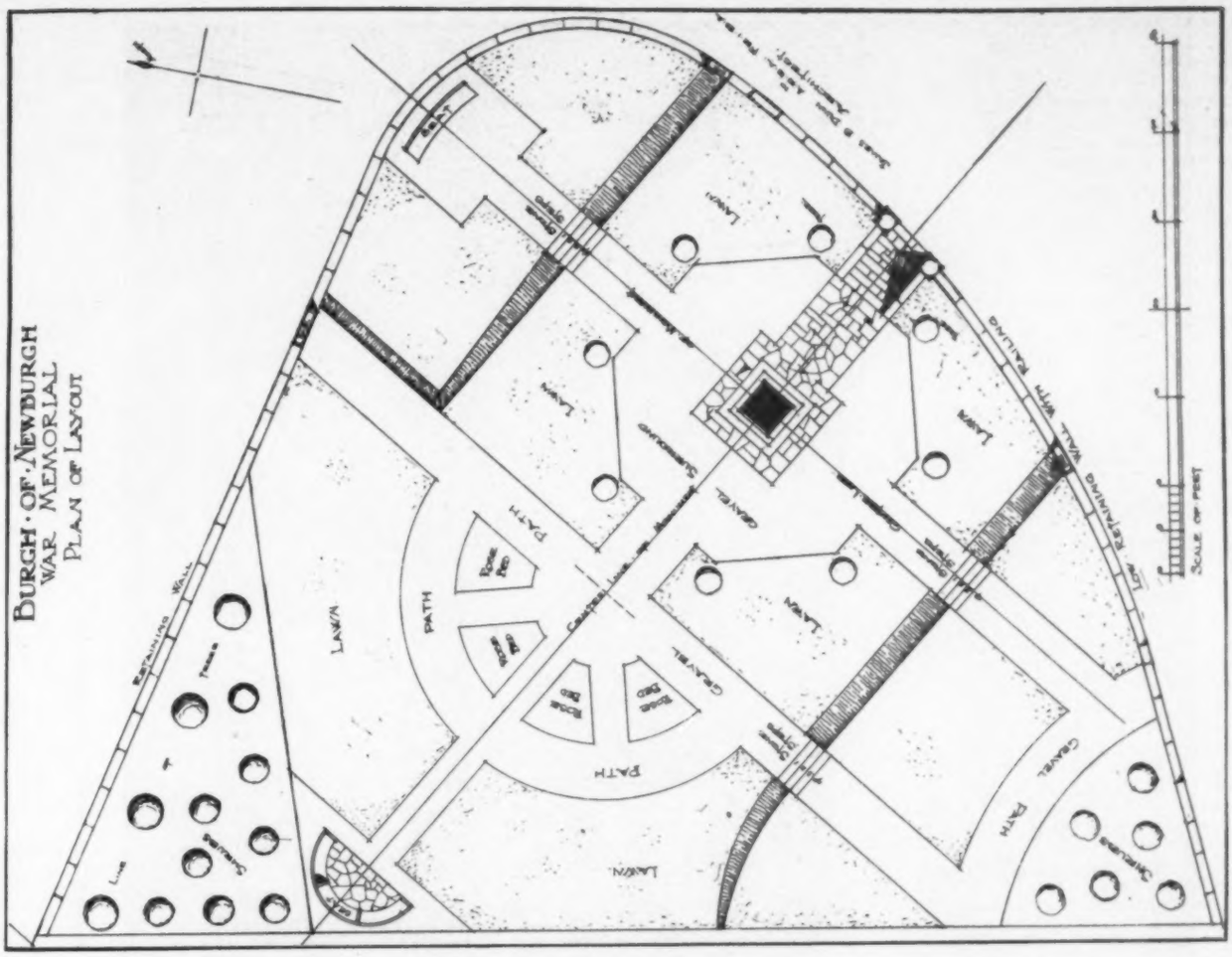
Architects' and Surveyors' Assistants' Professional Union.—Cinderella Dance. At Australia House, Strand, W.C.2. 7.30 p.m.

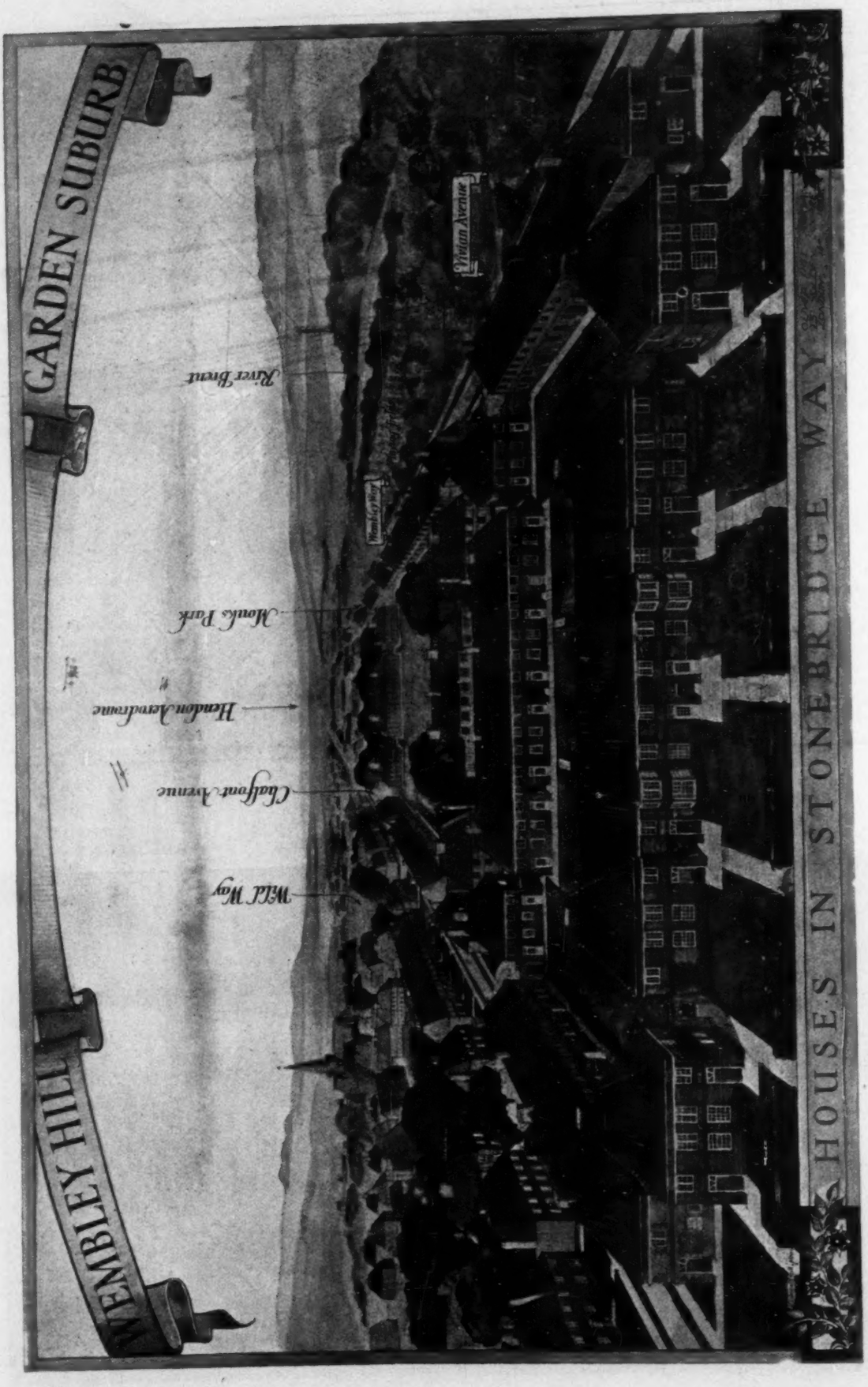
Institute of British Decorators.—Mr. T. P. Bennett, F.R.I.B.A., on "Woodwork." At Painters' Hall, E.C. 7.30 p.m.

Royal Academy.—Professor A. P. Laurie on "Modern Pigments: Their Proper Selection and Use." At Burlington House, W. 4 p.m.

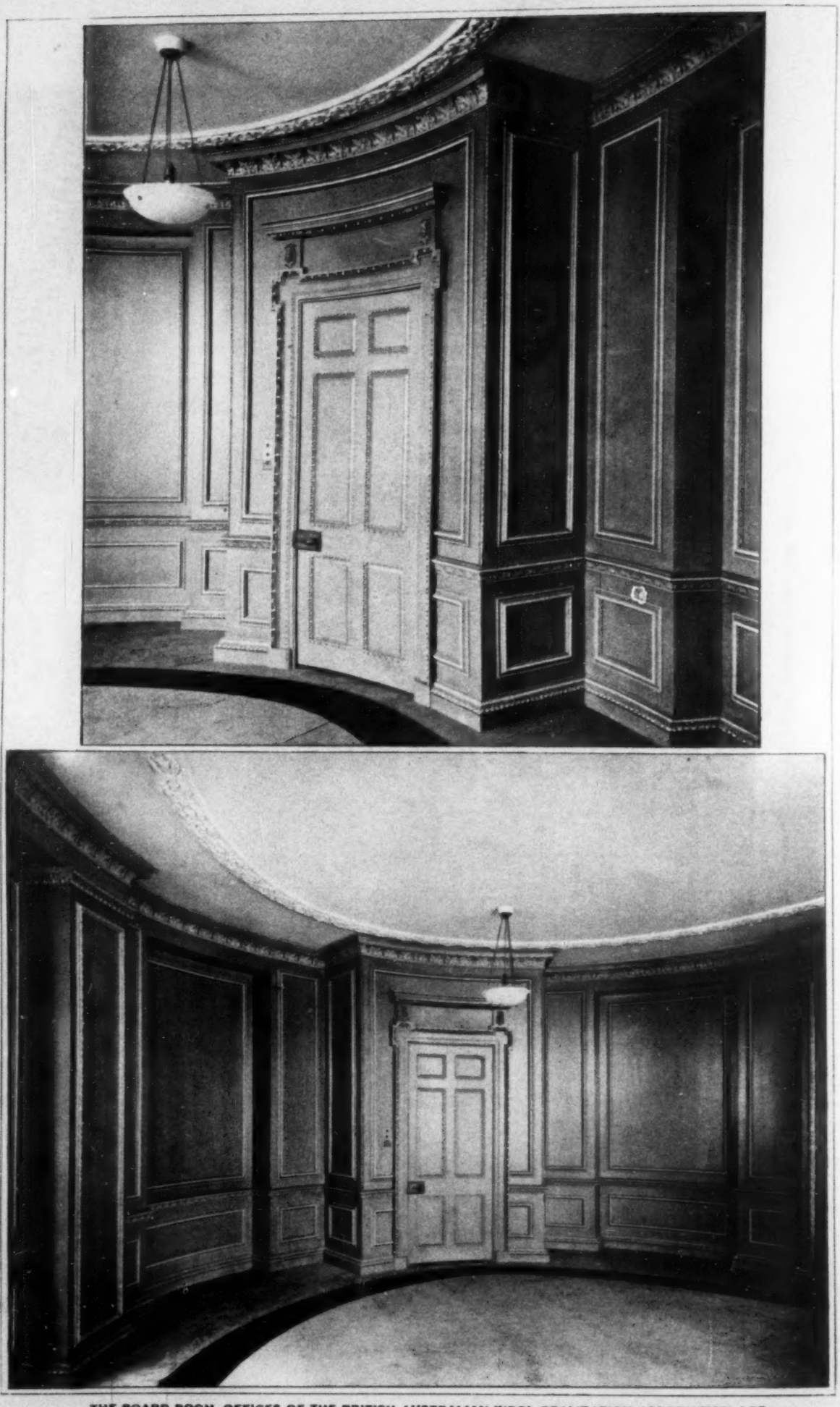


Town Hall, Milford, Connecticut: Rear Elevation. MESSRS. TRACY & SWARTWOUT, Architects.


BURGH · OF · NEWBURGH
WAR MEMORIAL
PLAN OF LAYOUT
LAWN
PATH
GRAVEL
GRAVEL PATH
LAWN
PATH
LAWN
LAWN
LAWN
LAWN
GRAVEL PATH
LAWN
LAWN
LAWN
LAWN
GRAVEL PATH
GRAVEL PATH
GRAVEL PATH



MR. OLIVER HILL, A.R.I.B.A., Architect. (See page 690.



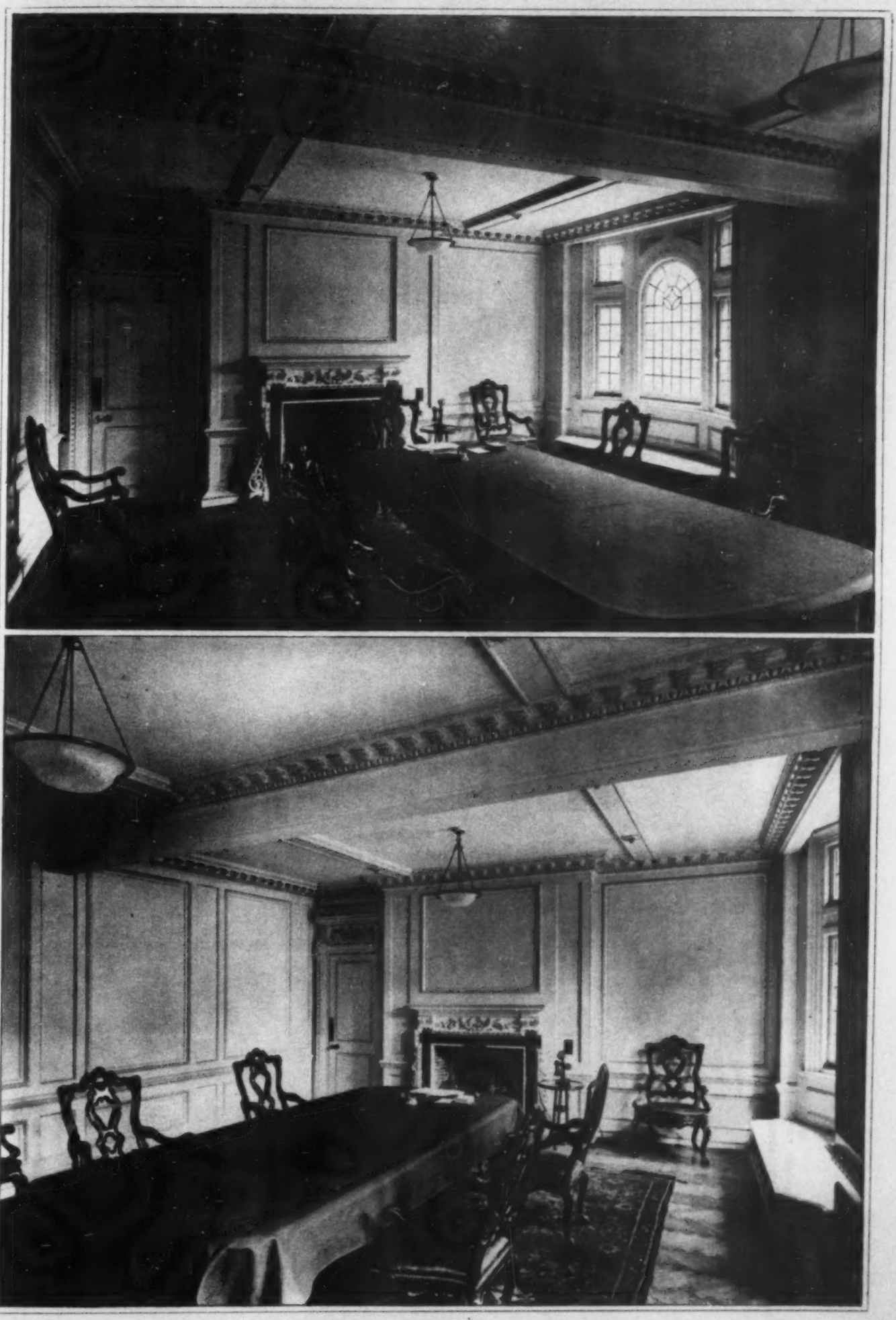
THE BOARD ROOM, OFFICES OF THE BRITISH AUSTRALIAN WOOL REALIZATION ASSOCIATION, LTD.

MESSRS. SYDNEY TATCHELL, F.R.I.B.A., & GEOFFREY C. WILSON, A.R.I.B.A. (MESSRS. BOURCHIER, TATCHELL & GALSWORTHY), ARCHITECTS.

R.A. EXHIBITION

R.A. EXHIBITION.

MR. HENRY HYAMS, F.R.I.B.A., ARCHITECT.



THE BOARD ROOM, PARK HOUSE, WESTMINSTER.

MESSRS. SYDNEY TATCHELL, F.R.I.B.A., & GEOFFREY C. WILSON, A.R.I.B.A. (MESSRS. BOURCHIER, TATCHELL & GALSWORTHY), ARCHITECTS.

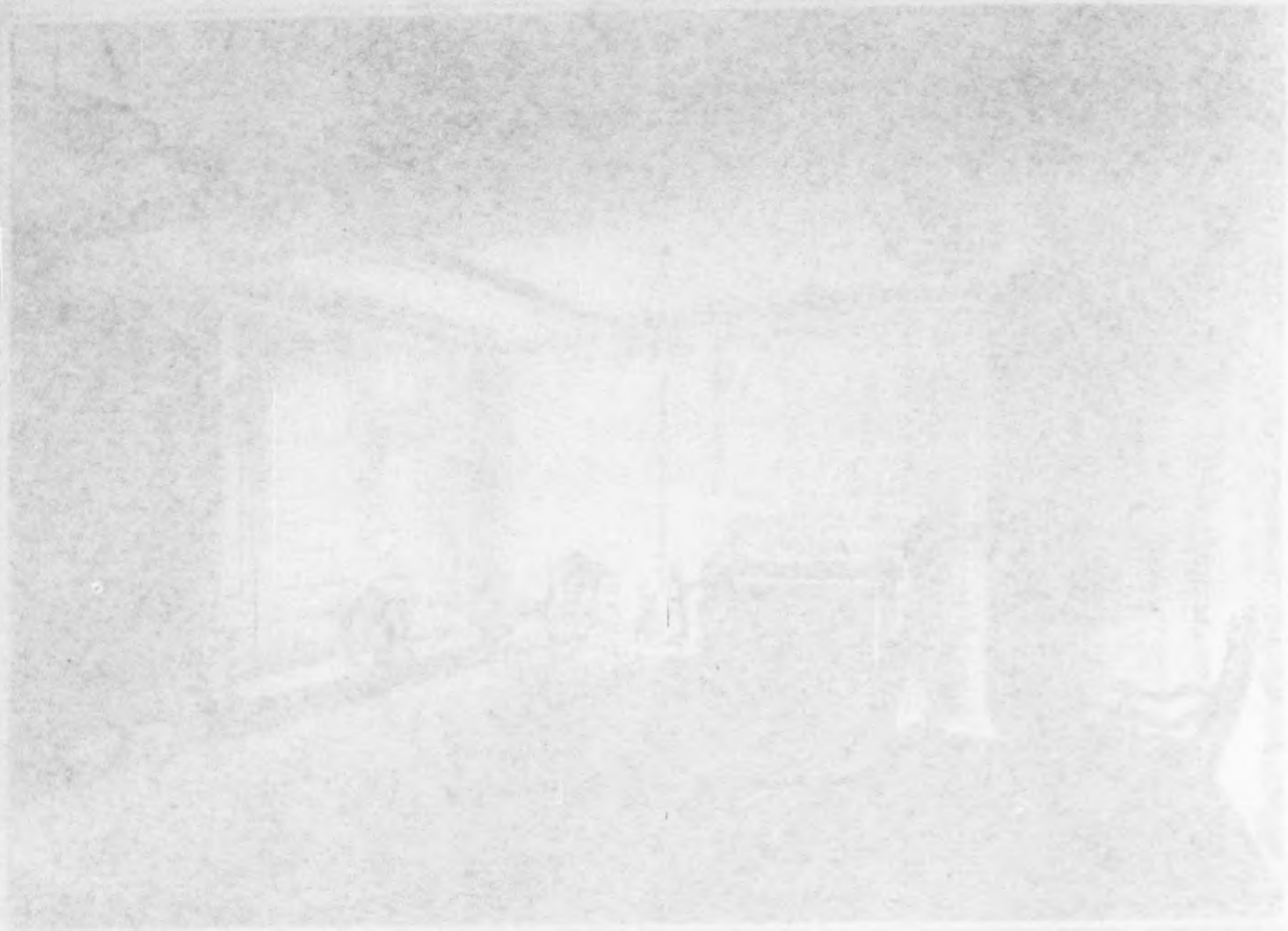


PHOTO No. I.

VIEW FROM THE INTERIOR OF NAVE RUINS DURING THE PROGRESS OF THE EXCAVATIONS.

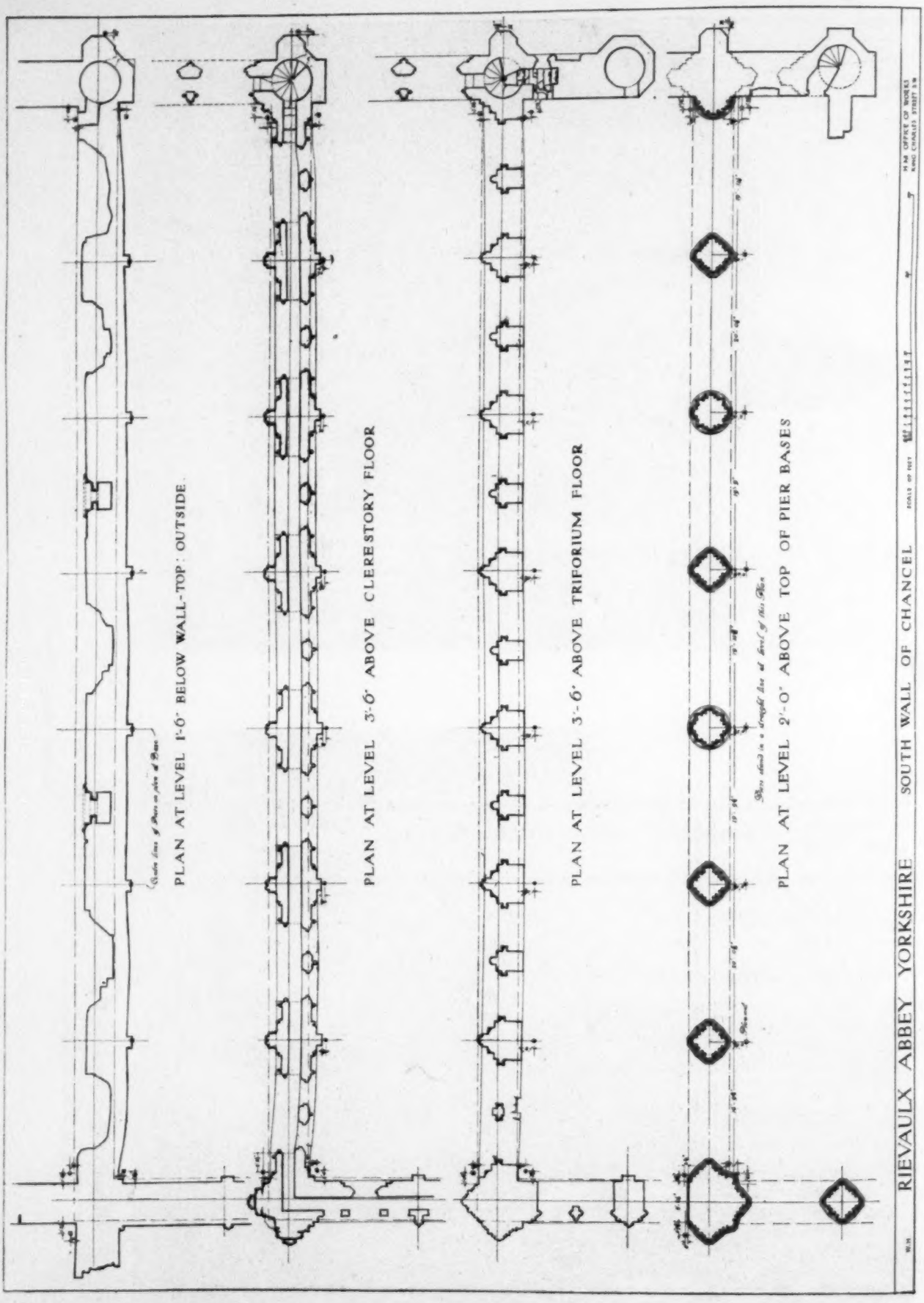
[The modern buttresses and pier under arch on the right indicate the type of repairs which the Historic Buildings Branch seeks to avoid.]

PHOTO No. II.

THE ABOVE SHOWS THE RUBBLE CORE OF NORMAN ARCH RETAINED BY CAREFUL CEMENT TAMPING.

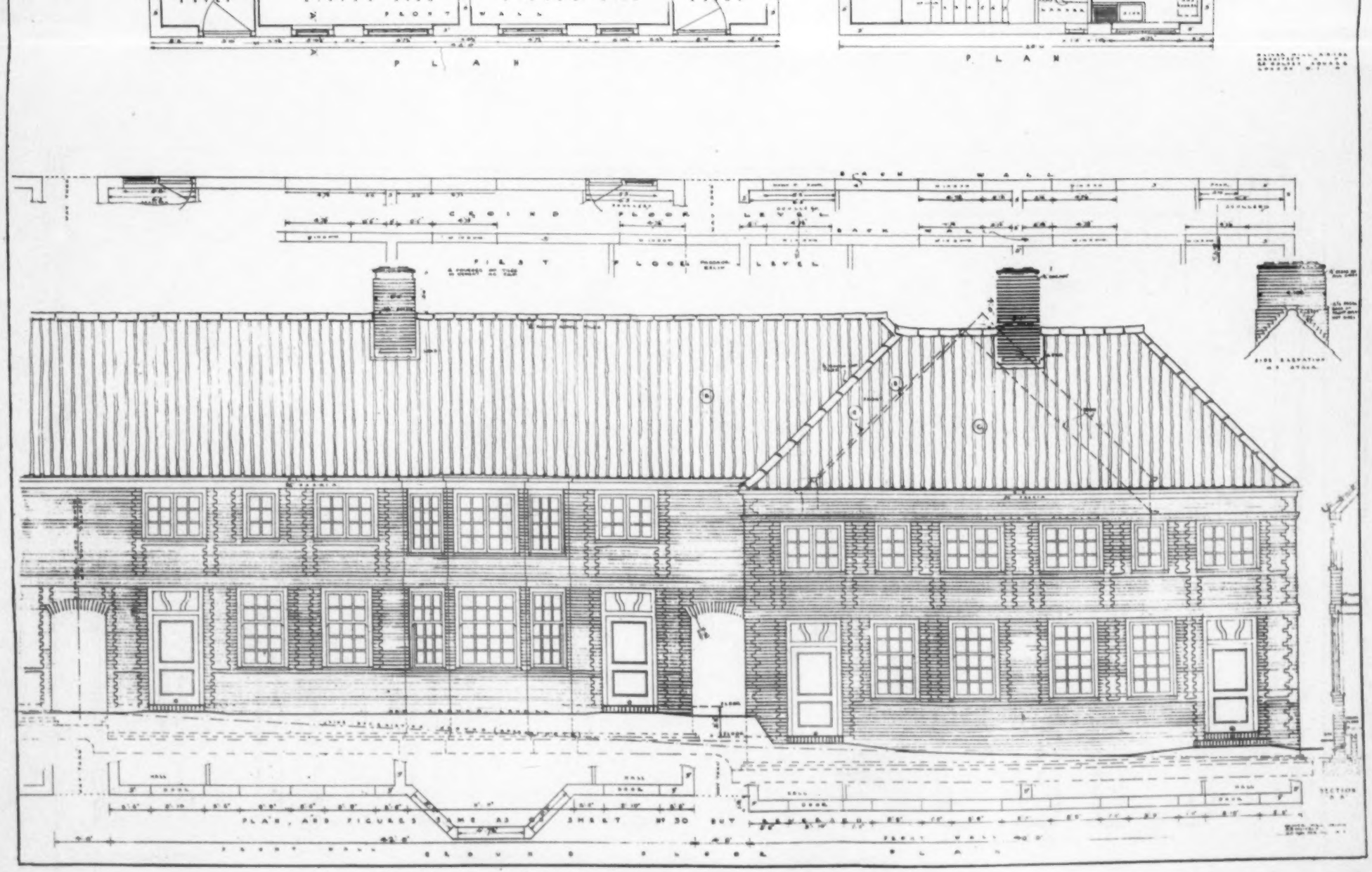
[The final lime pointing had not been applied when the photograph was taken.]

Rievau'x Abbey. [(*See p.* 703.)

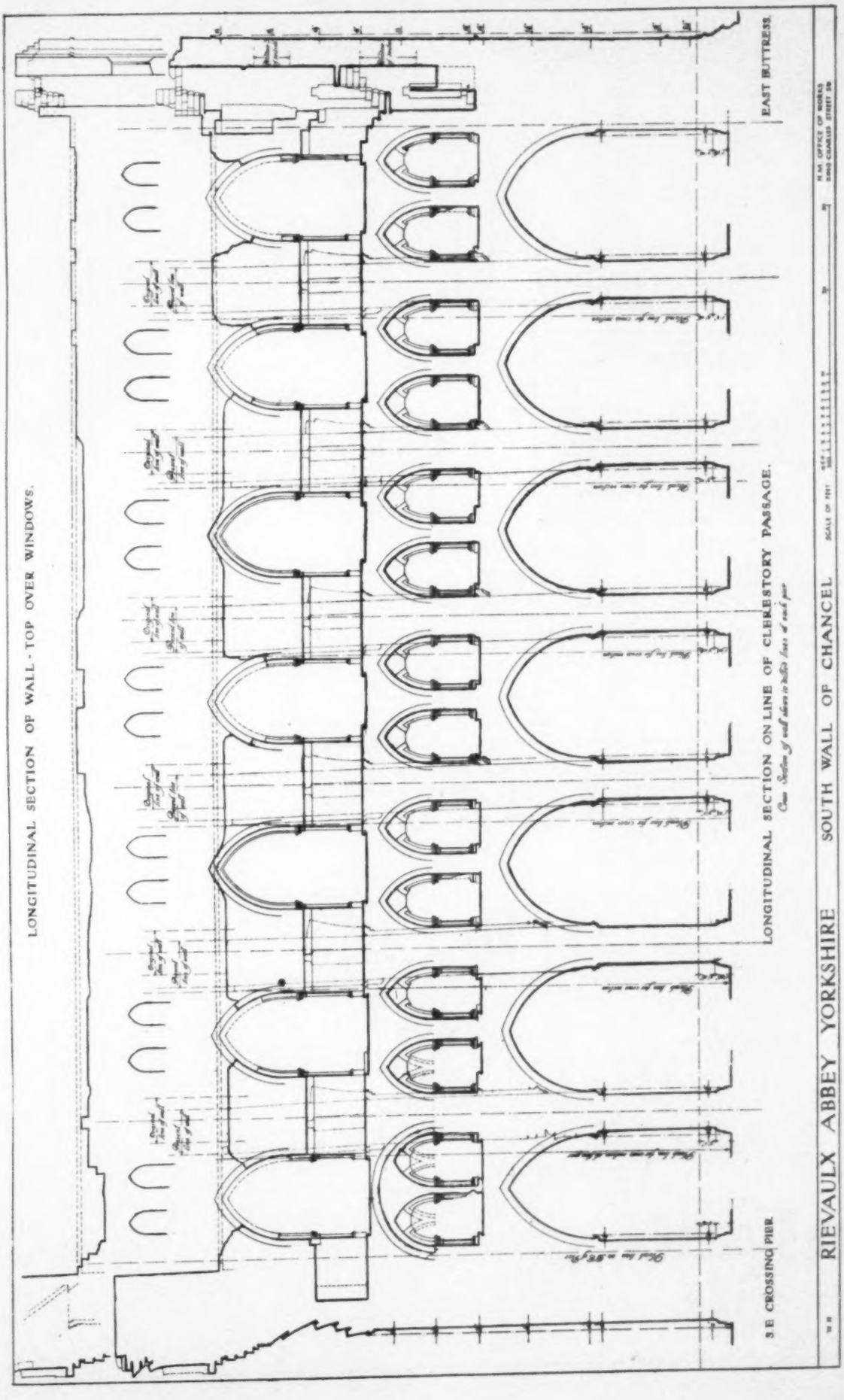

PLAN AT LEVEL 1'-6" BELOW WALL-TOP: OUTSIDE.
PLAN AT LEVEL 3'-6" ABOVE CLERESTORY FLOOR
PLAN AT LEVEL 3'-6" ABOVE TRIFORIUM FLOOR
PLAN AT LEVEL 2'-0" ABOVE TOP OF PIER BASES
RIEVAULX ABBEY YORKSHIRE
SOUTH WALL OF CHANCEL

(See p. 703.)

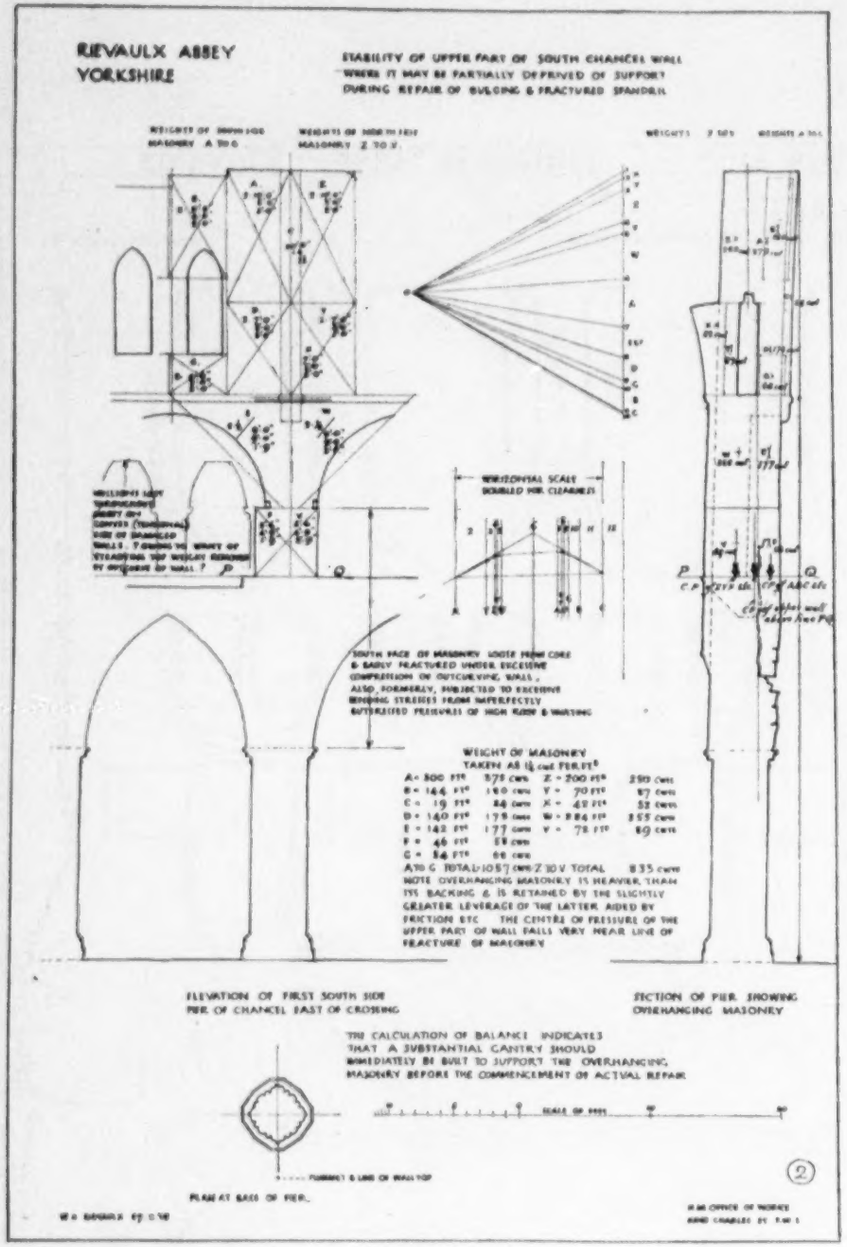
SECTION B-B
GROUND FLOOR FIRST FLOOR
TYPES OF PLAN
SIDE ELEVATION
PLAN
PLAN
FRONT ELEVATION
FIRST FLO
TYPES OF PLAN
GROUND FLOOR
SECTION A-A

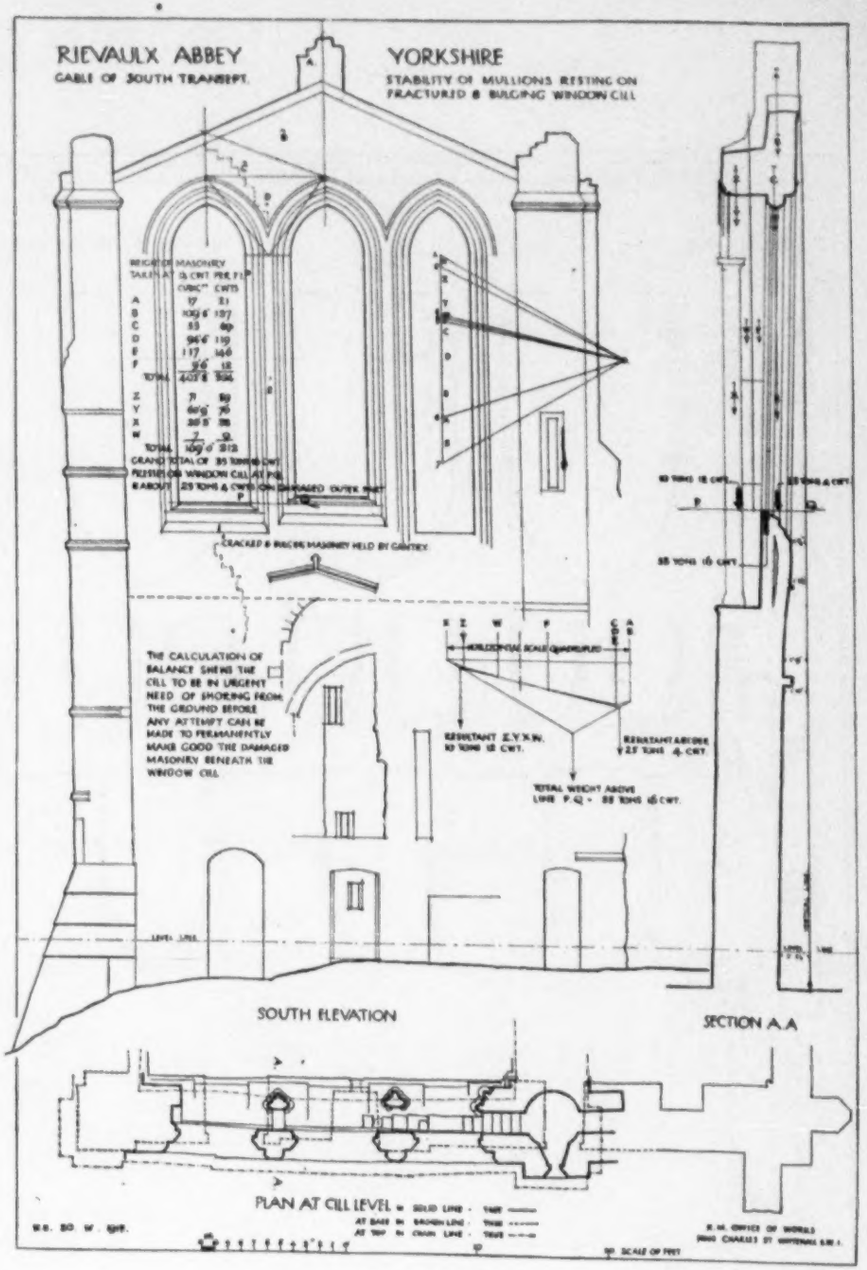


HOUSES AT WEMBLEY HILL GARDEN SUBURB. MR. OLIVER HILL, A.R.I.B.A., ARCHITECT.


LONGITUDINAL SECTION OF WALL-TOP OVER WINDOWS.
LONGITUDINAL SECTION ON LINE OF CLERESTORY PASSAGE.
EAST BUTTRESS.
S E CROSSING PIER.
RIEVAULX ABBEY YORKSHIRE
SOUTH WALL OF CHANCEL

(See p. 703.)


RIEVAULX ABBEY
YORKSHIRE
STABILITY OF UPPER PART OF SOUTH CHANCEL WALL WHERE IT MAY BE PARTIALLY DEPRIVED OF SUPPORT DURING REPAIR OF BULGING & FRACTURED SPANDRIL
WEIGHTS OF MASONRY A TO G
WEIGHTS OF MASONRY Z TO V
WEIGHTS Z TO V
HORIZONTAL SCALE DOUBLED FOR CLEARNESS
SOUTH FACE OF MASONRY LOOSE FROM CORE & BADLY FRACTURED UNDER EXCESSIVE COMPRESSION OF OUTCURVING WALL, ALSO FORMERLY, SUBJECTED TO EXCESSIVE BENDING STRESSES FROM IMPERFECTLY BUTTRESSED PRESSURES OF HIGH ROOF & VAULTING
WEIGHT OF MASONRY TAKEN AS 144 cwt. PER FT.
A = 300 ft² 375 cwts Z = 200 ft² 250 cwts
B = 144 ft² 180 cwts Y = 70 ft² 87 cwts
C = 19 ft² 24 cwts X = 42 ft² 52 cwts
D = 140 ft² 175 cwts W = 284 ft² 355 cwts
E = 142 ft² 177 cwts V = 72 ft² 89 cwts
F = 46 ft² 58 cwts
G = 54 ft² 68 cwts
A TO G TOTAL 1057 cwts Z TO V TOTAL 835 cwts
NOTE OVERHANGING MASONRY IS HEAVIER THAN ITS BACKING & IS RETAINED BY THE SLIGHTLY GREATER LEVERAGE OF THE LATTER, AIDED BY FRICTION ETC. THE CENTRE OF PRESSURE OF THE UPPER PART OF WALL FALLS VERY NEAR LINE OF FRACTURE OF MASONRY
ELEVATION OF FIRST SOUTH SIDE PIER OF CHANCEL EAST OF CROSSING
SECTION OF PIER SHOWING OVERHANGING MASONRY
THE CALCULATION OF BALANCE INDICATES THAT A SUBSTANTIAL CANTRY SHOULD IMMEDIATELY BE BUILT TO SUPPORT THE OVERHANGING MASONRY BEFORE THE COMMENCEMENT OF ACTUAL REPAIR
PLAN AT BASE OF PIER.
SCALE OF FEET
H.M. OFFICE OF WORKS
2


RIEVAULX ABBEY
YORKSHIRE
GABLE OF SOUTH TRANSEPT.
STABILITY OF MULLIONS RESTING ON FRACTURED & BULGING WINDOW CILL
WEIGHT OF MASONRY TAKEN AT 144 CWT. PER FT. CUBIC
A 17 21
B 109.6 157
C 13 19
D 96.6 139
E 117 168
F 9.6 13
TOTAL 403.8 556
Z 7 10
Y 60.9 70
X 28.5 39
W 7 9
TOTAL 109.9 128
GRAND TOTAL OF 85 TONS 0 CWT.
PRESSURE ON WINDOW CILL AT P.Q. ABOUT 29 TONS 4 CWTS ON DAMAGED OUTER SKIN
CRACKED & PARTLY MASONRY HELD BY GANTRY
THE CALCULATION OF BALANCE SHEWS THE CILL TO BE IN URGENT NEED OF SHORING FROM THE GROUND BEFORE ANY ATTEMPT CAN BE MADE TO PERMANENTLY MAKE GOOD THE DAMAGED MASONRY BENEATH THE WINDOW CILL
RESULTANT Z.Y.X.W. 10 TONS 18 CWT.
RESULTANT ABOVE 9 TONS 4 CWT.
TOTAL WEIGHT ABOVE LINE P.Q. = 88 TONS 16 CWT.
SOUTH ELEVATION
SECTION A.A
PLAN AT CILL LEVEL
SCALE OF FEET
H.M. OFFICE OF WORKS

(*See p.* 703.)

RIEVAULX ABBEY, YORKSHIRE.

By WILLIAM HARVEY.

DETAILED records remain to tell how Rievaulx Abbey was unroofed and thrown into premature decay at the time of the dissolution of the monasteries, so that the appalling state of ruin into which the buildings had fallen by the time that they passed into the custody of the Historic Buildings Branch of H.M. Office of Works in the winter of 1917-18 need surprise no one. Henry VIII meant the buildings to be ruined, and the wonder is that so much of the beautiful work of the Cistercian fathers exists at the present time. The remote steep-sided valley in which the abbey was founded may have done something to prevent its complete demolition, for although carved stones from it are to be found built into farmhouses and cottages for miles around, the difficulties of carting heavy loads over hilly tracks retarded wholesale demolition for the purposes of house building. Latterly, the Earls of Feversham have put a stop to these depredations, though until fairly recent times the refectory was used as a private shooting gallery, as its bullet-pecked walls testify. Some partial repairs had been executed under architectural advice, and as far as they went these works of repair had contributed to stave off a fall, but when the Abbey ruins were surveyed by H.M. Office of Works fresh movements were showing despite the unpleasant looking treatment of cement pointing that had been meted out to some parts of the old walls.

Unless adequate scaffolding can be provided, the works of repair to a high building are limited by the willingness of workmen to risk their necks on a distinctly hazardous enterprise. A slater or tiler who is used to working from a ladder is often the only volunteer, and the work executed under these conditions bears a distinct resemblance to the superficial application of dabs of cement to the tiles of a leaky roof. As a contribution to the ruin's endurance, this patching up with cement has only the merit of rendering wall tops temporarily watertight. Any movement in the structure forces out the pointing, and a small herb will flake it out of a joint in the course of a few week's vigorous growth.

The parts of Rievaulx Abbey Church that had been treated in this way included the wall tops of the south transept and the south high wall of the presbytery. The Portland cement and sand with which the work had been carried out had changed to a greasy black shade, very unpleasant to look down upon from the famous terrace on the hillcrest, and fully as slippery to walk upon as its looks seemed to indicate. Considerable portions of this paving were flaking away or being bodily lifted up by growing plants, and its chief interest and utility lay in the fact that where it remained adhering to the stonework its cracks indicated the measure of the movements in the walls since its application. The high walls of transept and presbytery rise to a height of 60 ft. from the old floor level, the fragment of central tower some 10 ft. more, presenting an ample expanse for the operation of wind pressure at a dangerous height above ground. The stonework throughout the presbytery has extremely fine jointing at the faces of the walls and, although the beds diverge in the interior, a fair face is presented on the outside. Movements and overhang do not readily betray themselves to casual inspection from below, although the departure from the vertical is alarming when actually measured by rule and plumb line. Some evidences that destructive forces were at work were obvious enough in the shattered stonework of the presbytery wall at the point of its greatest deflection from the vertical.

From the capital of the arcade pier to the wall top a series of cracks had opened up in a comparatively recent period. The bent condition of the clerestory passage confirmed the view that the crack was opening in response to movements in the wall as a whole, though a slight westward movement in the two remaining piers of the tower has probably contributed to open the fracture. Immediate support was required; but war conditions only permitted of salvage timber from the exploded Morecombe munitions factory being used on the work. An experienced clerk of the works, familiar with historic buildings work, was sent to do his best with the poor materials, and a triangulated gantry was constructed around the shattered masonry to relieve it of the worst pressures and provide a base for needling up the work when the war should be over and repairs could be executed.

The design of gantries of this sort calls for very close attention and collaboration between architect and clerk of the works; strength must be provided at points where the masses of masonry can be upheld temporarily until repairs can be put in hand, and also where steel needles can be inserted, wedged and sand-boxed to allow of their removal without vibration. The whole gantry has also to be arranged in such a way as will leave the face of the masonry accessible for grouting, tamping and pointing by the masons of the Historic Buildings staff. The problem, in this case, was complicated by the lack of suitable material and men. Of the small repair gang only two men were capable of climbing or working at any considerable height above ground, so that the survey of the ruins involved the most extraordinary acrobatic feats on the part of the clerk of the works and the representatives of the architectural staff.

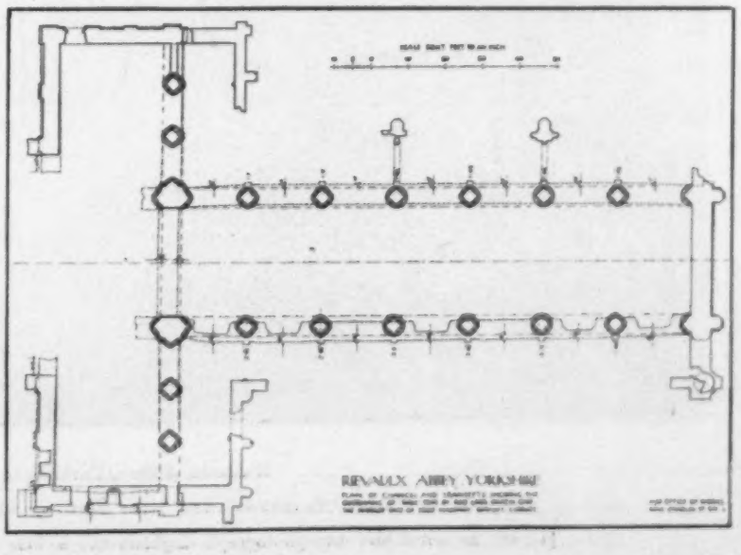
Photographs were taken of all parts of the ruins, and the efforts of the photographers in climbing to almost inaccessible parts of the walls were rewarded by some interesting records of the unbelievable extent of deflection in the wall-tops. The work was rendered doubly dangerous in that many parts of the wall-tops had been reduced by time and weather to mere heaps of rubble, from which individual stones were liable to slip and fall after a night's frost had pushed them the least infinitesimal fraction of an inch farther off their beds. The east wall of the north transept, the tower top, and all the walls of the remaining conventual buildings were in this state, and a sunny morning after frost was certain to see a new fall in some part of the ruins.

Although it had been intended to defer all permanent works of repair until better times, an exception was made in the case of some arches in the walls of the dormitory. The upper parts of the walls remained as a series of mouldering peaks from which small avalanches of débris fell on to the ground. Comparatively few face stones remained in position, and the whole length of wall was in danger of becoming a formless and featureless ruin. Some arches, of which the rubble core alone remained, gave interest to the wall from an historical and constructive point of view, but they had been denuded of almost all their mortar, and held together in the most precarious fashion. Each rough slab of stone was separated from the next by a mere handful of mortar, intertwined with the roots of grass and small herbs, and the slightest shock would have swept the whole arch away. Shoring up would have been decidedly risky, even if a sand pile had been substituted for wedges on the top of the temporary centre, but no carpenter could be spared to construct the centre even if it had been advisable.

Ultimately one of the Historic Buildings masons undertook the repair, and a trowel full of cement mortar was inserted above the old loam between each pair of voussoirs in turn, until a firm line of pressure had been established from springing to springing. When the first line of cement packing was complete further additions of cement were made, until the arch was capable of bearing the removal of the small quantity of loam and herbage from between the stones, and as each space was cleared of dirt a further portion of new cement was added to that already inserted in the joints. Photograph No. 2 (p. 699) shows one of the arches with adjoining portions of wall treated in this manner. A final pointing of lime and sand will modify the intensity of the shadows in the joints when the work of conservation is complete, but the pointing is kept back somewhat from the surface of the stones so as to preserve the character of the old masonry.

In some parts of the walls large trees were growing, with their roots interwoven among the stonework to such an extraordinary degree as to surround individual stones and carry them out of their original positions with the growth of the tree. More usually, large masses of ashlar facings were wedged away from the core of the wall by the roots. Some of the walls were so dilapidated that it was impossible at first even to climb up and cut away the trees for fear of doing irreparable damage, but after the Armistice, when repairs could be put in hand, the remaining trees were cut down and the roots hacked out piecemeal. One ash tree of over three feet diameter at the butt was particularly troublesome, in that its sappy roots had grown around and covered fragments of hard rubble which blunted the saws and axes.

Several of the partial repairs that had already been applied to the building seemed to have aimed at disguising the symptoms of decay rather than dealing radically with the seat of the evil, and it seemed a matter of primary importance to diagnose the trouble correctly before proceeding to its cure. Plumb lines suspended from the wall top beside the most conspicuously damaged part of the chancel wall demonstrated a most alarming overhang, and a series of plumb readings were taken above every pier of the Abbey Church, so that the



movements of each part could be recorded and compared.

It is not a simple matter to determine the cause of defects in the ruins of a Gothic abbey. Irregularity of construction may date from the original setting out, for the rigid exactness necessary in our thin modern buildings was not always held to be essential in Romanesque and Gothic times. Vaulting thrusts, wind pressure, the subsiding of foundations, may each be contributory causes of damage, or disintegration through exposure to rain and frost may have reduced the tenacity of the building materials to danger point.

If vaulting thrusts can be suspected of originating the movements and deflections, will these movements continue after the fall of the vault has relieved the walls of their outward kick? In the case of Tintern Abbey the north high wall of the nave is known to have fallen inwards after the thrust of the vaulting had been removed; but there it seems the wall had been built with purposeful eccentricity of weight to combat the vaulting thrusts, and the fate of the north nave wall and the dangerous overhang of its companion wall on the south at the present time, go to show that a present eccentric load is a real danger, whether produced as the result of inadequately buttressed vaulting, or by purposeful expedients employed by the original constructors.

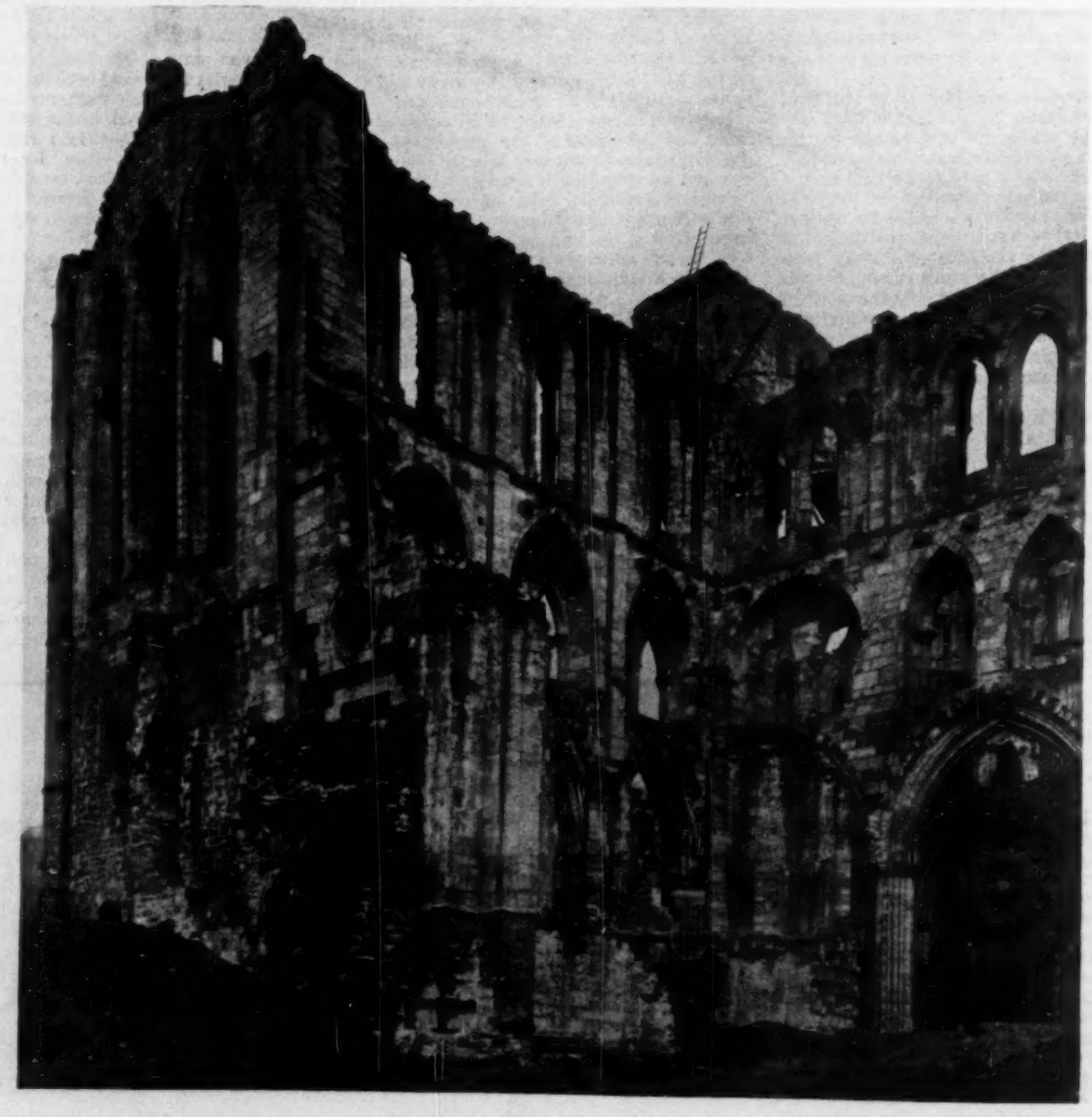
At Rievaulx Abbey the two existing high walls of the chancel are bent and lean outwards in the direction in which they would be pushed by the original vaulting. The north wall has suffered the less, since it is partially upheld by two flying buttresses, which remain as single arch rings of distorted curvature.

The piers of the tower now lean towards the west, and may have been pushed in this direction at an early date by vault thrusts from the chancel, the nave and transepts having been provided with a timber ceiling. The results of the survey conveyed the impression that the foundations of the chancel piers were sound, but showed that the upper parts of the walls were in every part longer than their bases, having expanded lengthwise as well as transversely, partly no doubt under the action of vaulting thrusts, but also, since the fall of the vaulting, through frost and the growth of the roots of trees and the spread of window arches and arcades.

The most active cause of continued movement seems to be eccentric loading, which burdens one side of the base of a wall or pier excessively, while relieving the other side of all pressure. Whether a wall has been built lop-sided or has become so by accident, the evidence of both Tintern and Rievaulx Abbey ruins goes to show that an eccentric load will, of itself, induce fresh movements tending to augment its own damaging effect.

It is not safe to approach the custody of an ancient building in the comfortable belief that its deviations from the vertical matter little, since the vaulting is now lost and will kick no more; or to put down all irregularities to the Arcadian way in which the old master builders allowed themselves to erect wonderful structures without troubling to design them first, as some authorities would have us believe.

The overhang of the fragment of tower (of about 1 ft. towards the west) may have originated in unbalanced vaulting thrusts, just as the outward lean of the east wall may be attributed to that cause; but the present movements in the tower fragment are at least partially due to the pull of the large masses of masonry left corbelled out on its western side when the remainder of the tower was destroyed. The survey drawings were prepared as records of the facts, and to assist in the consideration of means of repair. Had exterior buttresses been thought appropriate it would have been possible to uphold the ruins by their use alone; but this would have involved a great deal of conjectural restoration if the style of the building was to be followed, or the intrusion of new and inharmonious masses if the buttresses were to confess themselves as modern works built for mere utility. Their employment was postponed in



Rievaulx Abbey, Yorkshire.

JUNCTION OF SOUTH TRANSEPT WITH HIGH WALL OF CHANCEL BEFORE TREATMENT.

[It will be noted how the photograph disguises the serious overhang shown on the plans.]

favour of a scheme of reinforcement, whereby the outward bend and overhang of the long chancel walls might be restrained and the further movement of the tower fragment arrested, by uniting all parts of the ruin, while reducing to the minimum any new work added to the exterior face of the old walls.

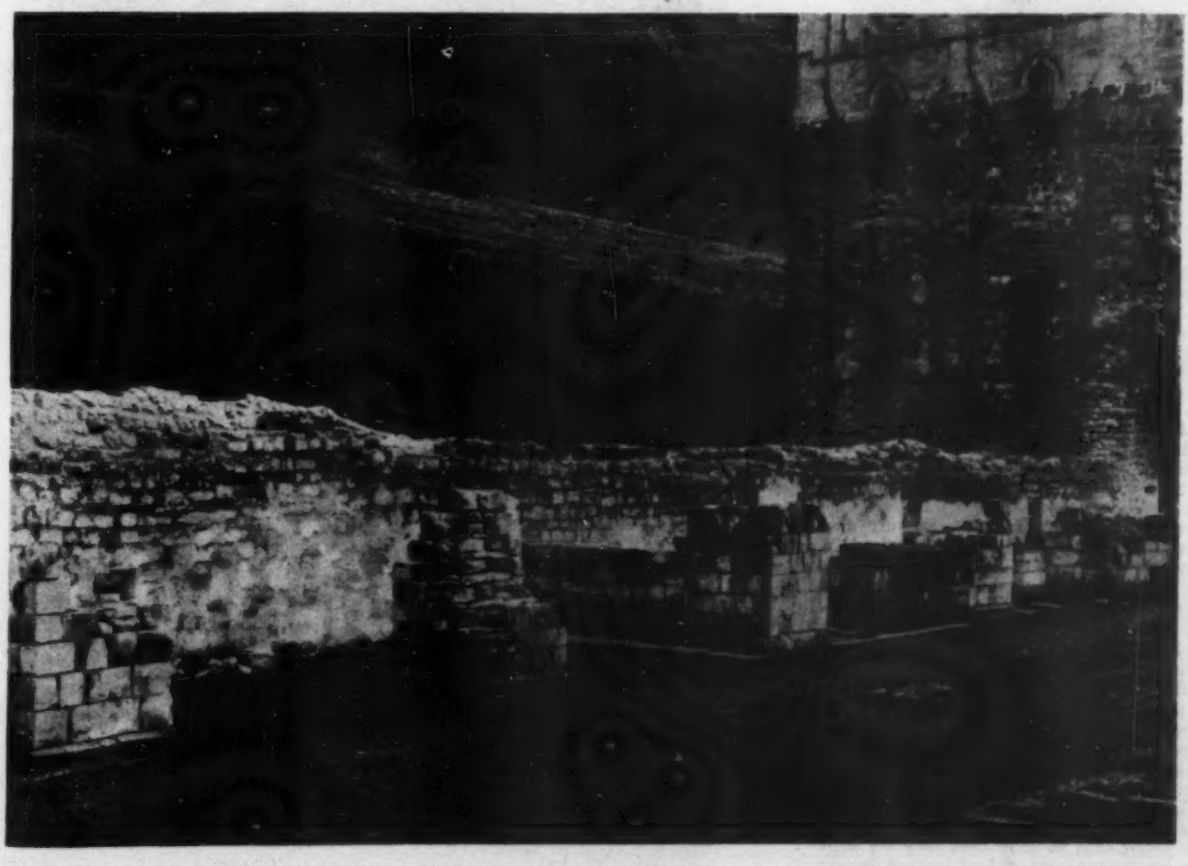
Some modern buttresses inserted in a previous repair, before the building was placed in the hands of the Historic Buildings Branch, show the unpleasant effect of insertions of new work into a time-worn building (Photograph No. 1, p. 699). The spur of projecting masonry may be excused in view of the serious outward lean of the south transept wall, but the pier in the centre of the Norman arch is a particularly unpleasant intrusion of inappropriate modern work. An arch is in danger of partial dislocation if only a few of its voussoirs near the crown are underpinned and may be left weaker instead of stronger by such treatment, while the colour scheme of light on the solid surfaces and shadows in the voids is brutally cut athwart by the new masonry glaring out from the shadow. But if a buttress was needed at the foot of the transept wall it is difficult to see why one should not have been provided to support the overloaded and fractured masonry half-way up the wall.

Actually the modern buttress spur had proved itself inadequate, for fresh movements were taking place in the upper parts of the wall which had taken up an inclined position involving excessive pressures on the outer ashlar facing of the masonry just below the sill of the great window of the south transept. The loads are not very great, but the overhang of the wall is so remarkable that the sill is bulging and cracking beneath the mullions which separate the three tall lancet lights. A temporary shoring gantry of timber was erected to support the damaged masonry at this point until such time as repairs could be put in hand. It was designed to combine strong raking shores with a framework of vertical and horizontal timbers to support scaffold platforms for the masons and their material. A weakness in the foundations seems to be indicated as part of the trouble in this transept.

When work was commenced after the Armistice scaffolds were erected in 1919 along the south chancel wall on both its faces. The preliminary survey of 1918 was augmented by a series of plans at the wall top, clerestory and triforium showing the deviation of the wall from a straight line and from the vertical at each stage of its height. The scheme for repair by means of reinforced concrete beams was under consideration at the time and the plans and sections of the wall were plotted as much for the discovery of the best method of treatment as for purposes of historical record. The apparently simple task of inserting reinforcement in the decayed rubble core of the wall was rendered difficult by the very small amount of space left between the floor of the clerestory passage and the crowns of the triforium arches. The proposal was to insert the steel only on the side of the wall where it would be most useful in turning the compressive strength of the old masonry into account and to make the work contribute to its own support. The need for some such treatment became more and more apparent as the detail survey proceeded. The end bays of the clerestory were shattered and disintegrated and needed holding together; the chancel plan resembled a box in process of being broken up with the nails half drawn at the joints. The survey plan shows how the east wall was moving out eastward, the south wall to the south, the tower fragment to the west, and the north wall to the north. Calculations, based upon the position of the masonry masses, showed that reinforcement beneath the floor of the clerestory passage alone would be insufficient in view of the extremely limited space in which to place the beam. It was thought desirable that the wall top should be turned into a beam also. In any case, a certain amount of disintegrated masonry would have to be refixed for its own preservation, and during this process the whole building could be bound together if the consolidation of the wall top were made part of a great belt of reinforcement which would anchor back the overturning tower fragment as well as strengthen the bulging wall. This method was actually put in hand; and without any show of new work, and certainly with little flourish of trumpets over what was a conscientiously worked out scheme. The repair of each detail was made to assist in the repair of the whole building.

The great out-corbelled masses left on the west side of the tower fragment were secured by adding steel and concrete beams in positions where tension members would be required if the masses were to be considered as brackets, and the tail ends of the beams were made secure to those running longitudinally along the top of the chancel wall.

This reinforcement has been made the subject of severe criticisms in that it disagrees with the "sentiment" of mediæval construction and introduces the foreign elements of steel and Portland cement into these old lime-built walls. Fears have been expressed that the steel and the masonry may act independently and that the masonry will drop away piecemeal. This very grave danger has been foreseen and the repairs have included the precaution of filling all loose joints with cement grout well tamped home in order to bind the material solidly together. In every case the reinforced concrete is protected from excessive changes of temperature by a covering of old stonework, and compares favourably in regard to position with reinforced lintels, &c., of a modern building. The repair of the fractured masonry at the westernmost pier of the south chancel wall is an instance of this combined regard for individual stones and for the strength of the whole structure. Little by little the damaged stones were taken out and replaced around a central core of reinforced concrete put in to replace



Rievaulx Abbey.

THIS PHOTOGRAPH SHOWS THE PIER BASES DISCOVERED DURING EXCAVATIONS MADE BY H.M. OFFICE OF WORKS.

[The turf floor has been laid in the place of the encaustic tiles taken up and sold by order of Henry VIII.]

Rievaulx Abbey.

FRACTURES IN SOUTH HIGH WALL OF CHANCEL BAY ADJOINING SOUTH-EAST PIER OF CROSSING.

the decayed and disintegrated rubble that had been split to pieces by the wrenching open of the wall by its own movements towards a fall. If the facing stones part company again from the mass, some time in the future, it will be because the building, with its unbalanced and overhanging masses, was in no condition to be saved by inconspicuous means. Earthquake-shaken buildings in the East are often preserved by buttressing with formless slopes of concrete applied externally to the walls, and to preserve the walls of Rievaulx Abbey Church by means of buttresses alone would demand enormous masses of new material. The result might be picturesque, but it would not retain the authentic fragments of historical masonry in so accessible or so legible a form as that in which they are kept at present. But the creation of picturesque ruinous compositions, fashionable in the eighteenth century, is not the object kept in view by the Historic Buildings Branch, which aims at conserving the beauty and the stability of the old buildings in its charge without involving the removal or alteration of a single old stone or the addition of a single new one, except upon obvious constructional necessity. The monuments are allowed to tell their own story without the intrusion of modern architectural design, whether good or bad, affecting the question. Where additions of any sort are unwanted it is a poor consolation to know that they are built in the best of good taste without modern cement or modern methods of construction.

H.M. Office of Works has been taken to task for soullessly regarding every monument entrusted to its care as a case for treatment from the standpoint of the engineer and not that of the architect, that structural defects are enlarged upon and the possibilities of architectural treatment ignored. The attack would be a difficult one to parry in words, but, fortunately, the works of repair already executed speak for themselves, since they bear comparison with any others of similar character in England and are far in advance of most Continental restorations, where the old work is all too frequently sacrificed to a subordinate place in a magnificent new scheme which shows how the old builders ought to have built their work if only they had known some twentieth-century archæology.

It is safe to write off a certain amount of recent criticism of the Historic Buildings Branch methods of conservation to the caprice of fashion. Some twenty years ago persons interested in the subject of ancient buildings learned from the fate of St. Albans Abbey that works of restoration which involved new architectural designs entirely satisfactory to the architect himself might be anything but satisfactory to other spectators. The new works were held up to the rising generation as the awful example of architectural impertinence, and it was made a point of honour among those who laid down rules for the guidance of repairs to ancient buildings that those who were entrusted with the work should see to it that they effaced their own personality in the presence of the work of a past age. They were on no account to use its architectural triumphs as a foundation for their own imaginative designs.

If this entire suppression of the architect's personality is somewhat too severe in the case of buildings which might actually be made fit for human habitation, it is only rational and appropriate to apply the rule to ruins to be conserved for their historical interest. The interval of time since the restoration of St. Albans Abbey has allowed some architects to forget its lesson altogether, while others have learned it too well, perhaps, for their own interest and professional credit. But those who want new, "well designed" buttresses to our ruins in place of inconspicuous scientific methods of conservation have doubtless forgotten it.

Edinburgh Memorial Window.

A stained glass window, representing St. Michael overcoming the Dragon, was recently unveiled and dedicated by the Bishop of Edinburgh at a special service. The window is in memory of 20 men connected with the congregation who fell in the war, and was designed and executed by Mr. G. L. Brodrick, Twickenham.

Dyfatty School: Open-Air Classrooms.

GENERAL VIEW.

Danycraig School: Open-Air Classrooms. (*See p.* 707.)

OPEN-AIR SCHOOLS.

AT a recent meeting of the Royal Sanitary Institute at Cardiff, Mr. Ernest E. Morgan, A.R.I.B.A. (Cardiff Borough Architect), read an interesting paper on "Open-Air Schools," in the course of which he outlined some of the recent work in this direction of the Cardiff Corporation.

Since 1900, he said, there had been a strong and widespread desire to ensure that new buildings and existing buildings should be suitably arranged for the arduous work of teaching, that the buildings should be adequately ventilated and well lighted and properly adapted for the particular needs of each particular school. The Swansea Education Committee, and particularly the Building Sub-Committee of that authority, appreciated the principles of good and adequate ventilation and lighting, and he had been instructed to design all future schools on reasonable open-air lines consistent with the site. The Building Committee had also considerably improved existing school buildings; window openings had been enlarged, and those that had been designed with fixed sashes had been made to open. Where it had been impossible to do that owing to the planning of the school, as at Dyfatty, fresh air had been conducted to the classrooms and halls by means of electric fans, filters, and ducts on the plenum system. He was not in favour of the mechanical and artificial form of ventilation. In the Municipal Secondary School all sashes were fixed, and there was no window-opening; fresh air was admitted on the plenum system, and it could be readily proved that the air in each classroom was changed six times every hour. The system worked well, yet there were continuous complaints of headaches, etc., and no one had a good word to say for the system.

The open-air classroom was, perhaps, the most convenient and satisfactory form of open-air education for all weathers, and for all children, and was obtained by the adaptation of existing premises or by special construction in the planning of new schools or classroom extensions. That might be achieved by (1) increased open window space; (2) removal of one side wall; or (3) the loggia arrangement.

A considerable amount of good work could be done in using the playground and shelter in fine weather. It had been found that although the surroundings of a public park were more desirable the weather was so uncertain in Swansea that the class could not obtain sufficient shelter should a shower take place.

He considered there were three essential requirements in designing schools: (1) abundant supply of fresh air; (2) a maximum amount of daylight; and (3) direct sunlight for some hours during the day. He divided the existing schools in Swansea into four classes: (1) Heterogeneous collection of classrooms; (2) classrooms totally surrounding and opening direct into assembly hall; (3) classrooms surrounding the assembly hall on three sides only; (4) assembly hall independent, with classrooms opening into corridors or verandahs, and designated the pavilion plan.

Dyfatty School might be considered as the best or worst example of No. 1. An area of land 145 ft. by 140 ft. was entirely covered with buildings. It was probable the original plan was in the shape of the letter "E," and some misguided persons had filled in the intervening spaces to increase the accommodation. His first duty was (failing reconstruction) to drive air by fans and ducts into those parts of the school not properly ventilated. But that was not an adequate solution of the problem; what should be done was to turn the plan back into the "E" shape by demolishing the more recent portions and to obtain the extra accommodation by raising the building another story; the two quadrangles could then be turned into school gardens with a loggia and verandah on two sides, on the open-air principle.

The central hall type impressed one with its compactness, and idea of ready and adequate supervision it seemed to afford of the whole school; it commended itself from the point of view of convenience, ease of administration, and economy of site, especially where land was very valuable. But tested from the three hygienic essentials before mentioned it was hardly so satisfactory.

The natural cross ventilation for the majority of classrooms must be into the assembly hall, which could not be entirely satisfactory either in hot days of summer or in stormy days in winter, when the weather and direction of the wind was such that it was impossible to have the usual windows open, and the teachers were forced to rely upon the openings into the assembly hall. It could be argued that as good lighting could be obtained in that type as in any other, and as regarded the classrooms he was bound to admit it, but as regarded the central hall itself the architect had been forced to the use of skylights or numbers of high dormer windows which necessitated constant attention. It was difficult to arrange for direct sunlight in that type of plan, and, as most often happened, even when classrooms were only on three sides of the assembly hall, the hall had been planned fronting south with the classrooms fronting either east, west, or north, and he was convinced that classrooms into which the sun never shone during school hours were detrimental to the quality of atmosphere and cheerfulness of the room and had a very direct bearing on health.

Type No. 3, with classrooms surrounding the assembly hall on three sides only, was merely an adaptation of Type 2, and the same remarks applied in a modified form.

Type No. 4 (pavilion and quadrangular pavilions) met every one of the three essentials. Every classroom opened and ventilated into fresh air, and should the wind and rain prevent the usual windows from being opened those on the other side might be used, and they were in such a position as not to need mechanical arrangement to open them. The aspect of the classroom could be placed in any position which might be most favourable, and the plan was ideal for designing a school on open-air principles.

Criticism might be levelled at that type of school as being expensive. It must of necessity have a larger superficial area, but it was much more economical to construct, and the Board of Education permitted a reduction in the height of the classrooms.

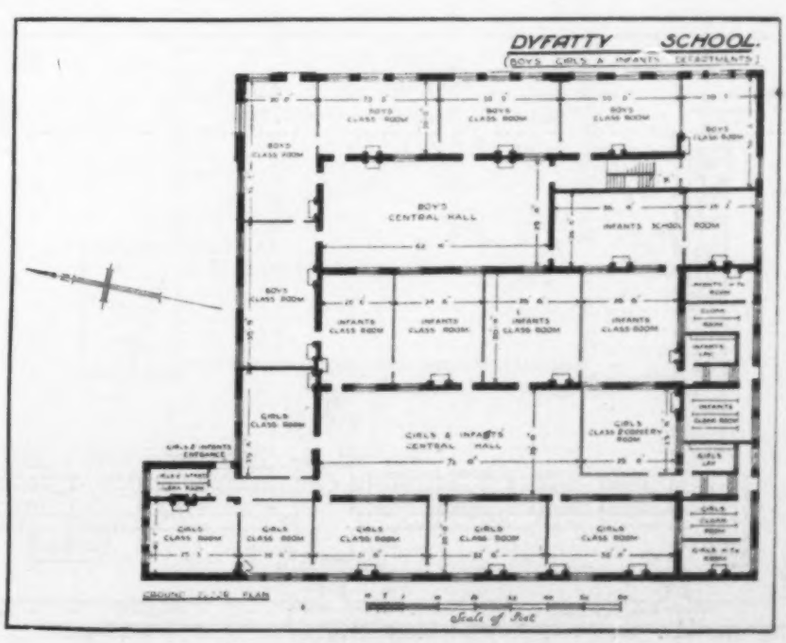
Dyfatty School.

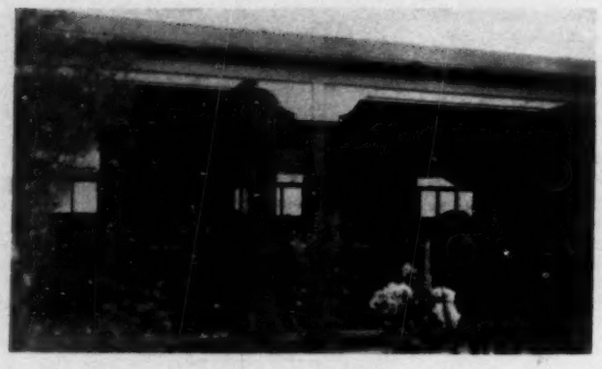
The Education Committee of Swansea made a start in 1912, when two open-air classrooms were added to Dyfatty School. These classrooms had been recognised by the Board of Education as additional ordinary accommodation to the school. The playground of Dyfatty School adjoined Dyfatty Park; advantage was taken of this, and two classrooms were erected in the park with one long side open along its whole length, the other side being the boundary wall. Both ends could be opened at will. There was louvre ventilation along the whole length of the building. The open side was protected by a glass verandah, and it fronted the green sward of the bowling green, and was only separated from it by a low bank of shrubs.

In 1919 another classroom was added. There was no artificial heating. The pupils were selected from the girls' department on account of defective physical condition or backwardness with school work due to physical causes. There was no reluctance shown by the parents to sending their children to be taught under open-air conditions; no child was withdrawn, and the attendances as compared with the previous record of the children was much improved. No illness which might have been attributed to open-air conditions attacked the children. The school was well sheltered from prevailing wind. A survey was made of the children before the summer holiday, and there was shown to be a decided improvement not only in their health, weight, and attendance, but their education progress was also decidedly improved. Obvious improvement in the health of the teachers was one noticeable effect.

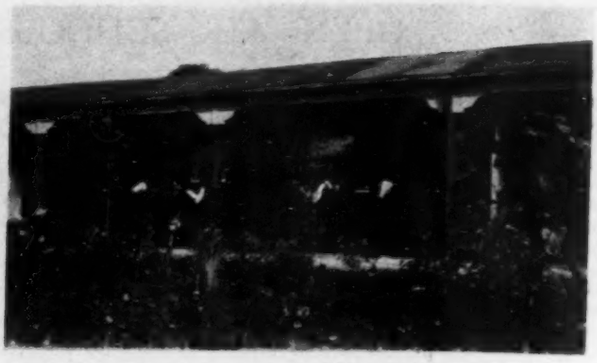
Danygraig School.

Four open-air classrooms were erected at Danygraig School, two for girls opening direct on to the girls' playground, and two immediately above for boys, and were first occupied in November, 1913. These classrooms differed from the Dyfatty classrooms inasmuch as they had sliding outside partitions opening into a loggia or verandah which enabled them to be closed. They were heated by low-preasure hot-water radiators, and were used like





BOYS' CLASS AT WORK.



A PORTION OF THE GIRLS' DEPARTMENT.

Glanmor Central School. Open-Air Classrooms.

ordinary classrooms, with no selection of children as at Dyfatty. There was no open-air during the severe winter months, as the sliding partitions were kept shut by the class teacher owing to the discomfort from the cold, the noise from the infants' playground during the infants' playtime, and because on windy days too much dust was blown in. During late spring, summer, and autumn they kept the sliding partitions widely open, and the teachers were of opinion that the experiment fully justified the Education Committee in planning all new schools on those lines.

Speaking in connection with this experiment, the lecturer said, "Don't plan an open-air classroom opening direct on to a playground because of dust; they should open on to a cultivated school garden. Don't hope to be successful on an exposed site except on the quadrangular pavilion system. Don't be afraid of overheating an open-air classroom; it will make the teachers open the partitions."

Glanmor School.

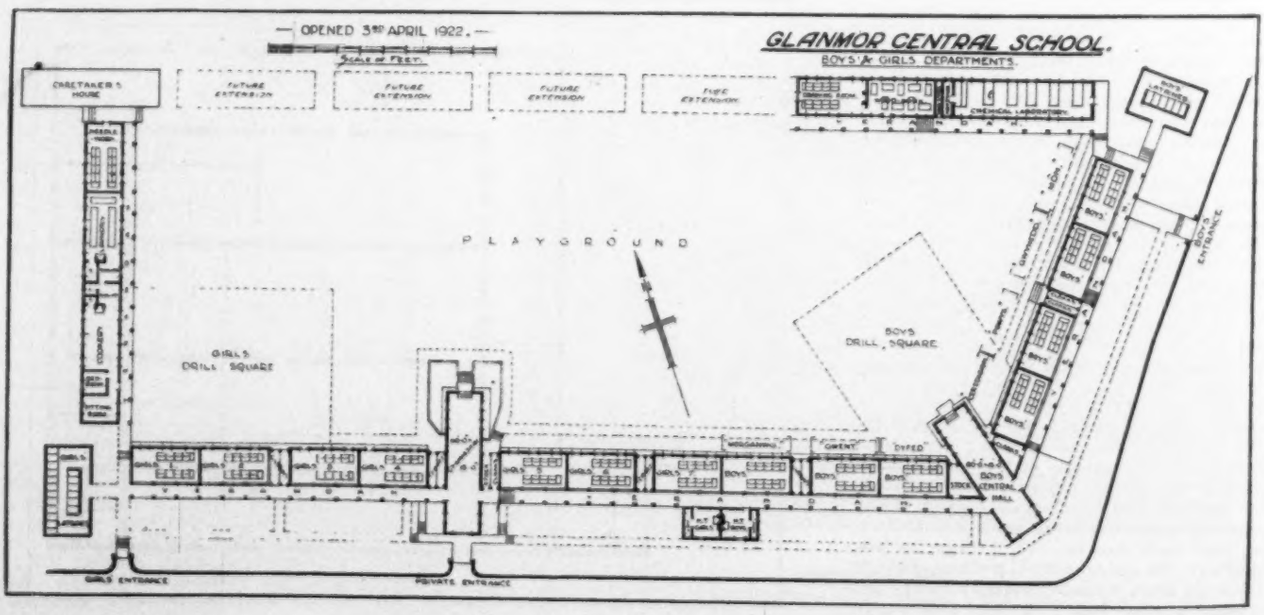
Early in 1914, the lecturer continued, he was instructed to prepare the plans for the new Glanmor School on the open-air principle. The site was fairly level, well wooded, and, though of high altitude, was well sheltered from the prevailing winds, with beautiful vistas of park lands. The high cost of building after the war prevented the Committee obtaining sanction to proceed according to plan, and the Fisher Act also had a direct bearing upon the scheme.

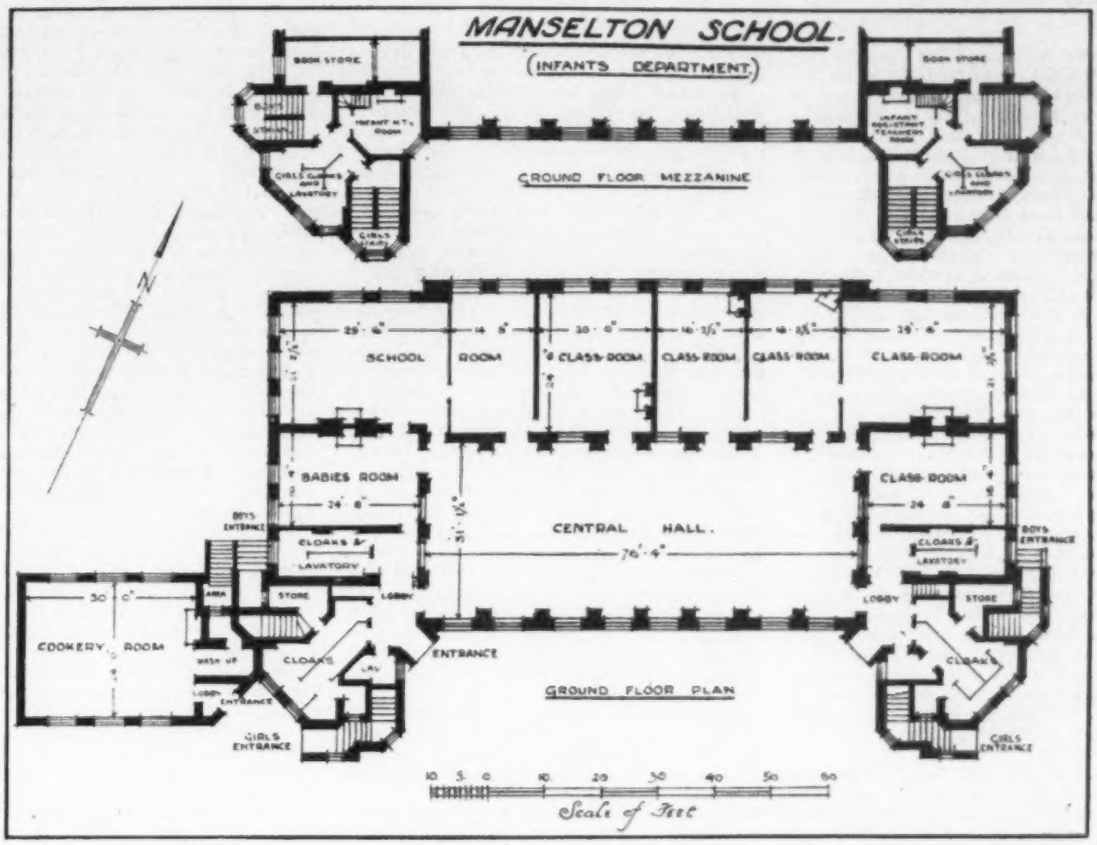
Plans were then revised and 14 Army huts were purchased and converted into a central day continuation school for 630 boys and girls, and in addition to the classroom accommodation there were two assembly halls, woodwork and metalwork laboratories, physics and chemistry laboratory, housewifery centre with model bedroom and sitting-room, cookery-room, laundry, needlework-room and caretaker's house. The building was designed on the pavilion plan and each classroom had folding screens which could be folded back at will, opening on to a 7 ft. glass verandah fronting the school garden. All buildings were centrally heated with hot-water apparatus. The cost of the school was £12,000, including electric lighting. Each classroom was provided with its own cloakroom, obtained by erecting the huts detached from one another and roofing the intervening space.

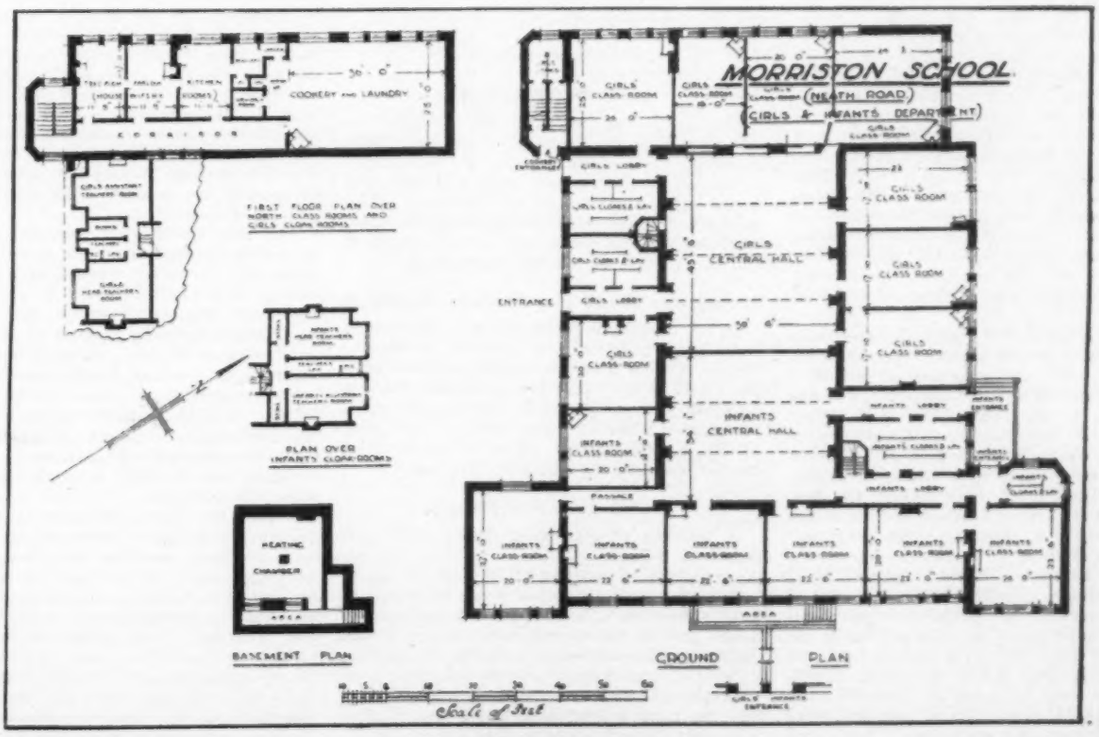
Llwyn-y-Bryn School.

In 1919, 3 semi-permanent classrooms were erected at a cost of £2,300, called the Llwyn-y-Bryn High School for Girls. The classrooms were protected with a 7 ft. glass verandah heated by low-pressure radiators and furnished with open-air cloakroom, boiler-house, etc. The improvement on previous types was a transome above the sliding screens with pivot-hung sashes which enabled the windows to be opened even if the sliding screens had to be closed. The classrooms were covered externally with weather-boarding lined with asbestos sheeting, and were erected on a brick base. The roofs were covered with boarding and "Ruberoid." Each room had through ventilation with adjustable ceiling ventilation. The building was well sheltered, and he had found that the screens were kept wide open every day right into the month of December, that the children and teachers preferred that type of classroom, and the headmistress herself selected one of the open-air classrooms in which to conduct her lectures.

In conclusion, he said the open portion of classrooms should face from S.E. to S.W., and should, if possible, open on to a school garden. Classrooms should not open direct on to a playground because of the dust and noise. If the site were exposed and the contour of the ground permitted the classrooms might be planned with advantage on the quadrangular principle. Every room should be planned with through ventilation. The method of opening the screens should be as simple and easy as possible, or they would always remain shut or the cost of maintenance would be heavy. Each classroom should be abundantly heated, preferably on the low-pressure system, which should tend to force the teacher to keep the screens open even during the most inclement weather. For any site, the aspect, amenities, contour, shelter from prevailing winds, etc., must govern the planning of a school on open-air lines; what might be applicable to one was quite out of the question in another. Generally speaking, the site should be sheltered, though fairly open, with, if possible, trees breaking the force of the prevailing winds; it should be easily accessible, yet set in rustic surroundings.







Open-Air Schools.

(*See p.* 707.)

UNIFICATION AND REGISTRATION.

AT the annual meeting of the Committee of Licentiates, R.I.B.A., held on October 30, Mr. John E. Yerbury said that, in the opinion of many members of the Unification Committee, the resolutions on Unification passed by the Council of the R.I.B.A. were ineffective because they held that the Council of the Institute was exceeding its powers in taking such a course. That view had since been supported by legal opinion, and an appeal ought to be made to the Council of the Institute to reconsider the position and invite the Unification Committee to complete its work and report its recommendations.

The election of Council at the R.I.B.A. in June resulted in a landslide for Unification, the opposition winning 11 of the 12 places on Council, with the policy of Registration before Unification. In his opinion there was nothing more certain than that Registration of a disunited profession must fail, and although the R.I.B.A. Council had set up a Committee to draft a Registration Bill, and another Committee to draft a new Constitution for the Institute, he could not help thinking that the organisers of the "raid" recognised the fact—and were content to recognise the fact—that they could not succeed in their avowed object, and did not really desire success. It was quite inconceivable to him that any man could believe that Parliament could or would sanction a Bill presented by the R.I.B.A. which would deny the right of others to take a place of absolute equality on the Register. But if that policy could succeed, in his judgment the position of the R.I.B.A. as the recognised mouthpiece of the profession would be lost.

In 1911, Licentiates were asked to join the R.I.B.A. as a means to unification of the profession, and some 2,000 unattached men answered the call; many had died and many others had become Fellows. Since 1911 they had paid into the R.I.B.A. some £17,000 more or less in order to obtain the promised Unification. So long as the Council of the R.I.B.A. was making an effort, however feeble, to bring about Unification they did their bit towards obtaining the end in view; but if the Council of the Institute maintained the present attitude of opposition to Unification, he was bound to say that he should lose his interest in the R.I.B.A. It was incomprehensible to him that any man could find distinction in belonging to a Society which so light-heartedly reversed its policy year by year without any consideration for past promises. The R.I.B.A. was committed to Unification, and entered into provisional arguments with others interested to devise a scheme; it took the initiative in forming a representative committee of the whole profession to work out the details of the scheme, and at the eleventh hour it deserted and sold the pass.

He did not know by what method of reasoning members of an honourable profession reconciled that action with any standard of honesty; but he did know that it had lowered the status of architects in the eyes of all those other professions who had watched their efforts with interest, and that a large number of architects were much ashamed of their present position. Having devoted much time during the last eleven years to forward Unification he was not anxious to say or do anything which was inconsistent, but he was so profoundly convinced that the present policy of the R.I.B.A. Council could only lead to disaster, that in the event of its being endorsed he should look upon the position as hopeless in his time and leave the matter to be dealt with by a more enlightened generation. If they lacked the spirit of self-sacrifice necessary to great achievement they might as well admit the fact at once and leave ideals to a future generation, but if that *esprit de corps* and desire for a high standard of professional ethics really existed, surely the representative Unification Committee could have adjusted their differences and submitted a scheme which, without injustice to any man, would have satisfied the aspirations of those who wish to see architecture take its place in the ranks of the learned professions.

He hoped Licentiates would support the Association by taking every opportunity of expressing their opinion that the Unification Committee should continue its work, and be ready and willing to take whatever steps might seem to them to be in the interest of architecture. There was at present nearly 1,500 Licentiates and their subscriptions amounted to nearly £3,000 per annum; that was to say, they were strong enough, if acting as a united body, to prevent any form of Registration based on the proposals of 1914. In the past they had been modest in the part they had played, being content to allow others to lead if they took the right direction, but, after all, they were not children—most of them were, in fact, becoming old men, and if the R.I.B.A. was, in the future, to be led by "Die-Hards" the time would surely come when they would have to fight for themselves, and he hoped they would be ready.

On the one hand, if Registration could be obtained without Unification, then he thought they would fail to attain the greater end, as he felt sure that, having registered, men would probably care little for a Central Authority. The Allied Societies would concentrate their energies in their own centres, leaving the R.I.B.A. and the Society of Architects to share London members between them, and the Institute would have no more influence than any other society—probably less than many—as the natural tendency under such conditions of the R.I.B.A. would be to drift into a mutual admiration society of a limited number of undistinguished elderly men craving for a distinction they could never attain. On the other hand, with Unification under the R.I.B.A., Registration would follow in due course, and even before actual attainment of legal status as a closed profession the Institute Register would be for all practical purposes a register of the whole profession, while the R.I.B.A. would be the heart and brains of a live profession directing the energies of a great industry for the honour and glory of a great art.

Leeds War Memorial.

The Leeds war memorial was unveiled on Saturday last by Viscount Lascelles. The memorial is a winged figure of "Victory" in bronze, bearing in one hand a wreath and in the other a sword, on a pyramid of white marble. The figure is 11 ft. in height, the total height of the monument, which is the work of Mr. H. C. Fehr, of London, being 31 ft.

St. Stephen's Church War Memorial, Edinburgh.

In St. Stephen's Parish Church, Edinburgh, recently, a memorial was unveiled in remembrance of those from the congregation who gave their lives in the war. The memorial, which is in cenotaph form in marble with a brass tablet, contains 165 names. The tablet is the work of Mr. Emslie, and is set in a cenotaph of marble, designed by Mr. John Ingram.

Victoria and Albert Museum.

A number of interesting pieces of English furniture recently presented by Mr. Douglas Eyre have been placed on exhibition in Room 56 of the Woodwork Galleries of the Victoria and Albert Museum These pieces date from the latter part of the seventeenth century to the middle of the eighteenth century, and include a winged arm-chair of about the year 1700 embroidered in coloured wools, with David playing the harp before Saul, and other Biblical and mythological subjects; and a large double-back settee with three chairs and a stool of the time of James II. Among examples of the eighteenth century, the most valuable is a set of mahogany chairs, richly carved with ornament of the middle of the century and the crest of the Eyre family.

TOWN PLANNING.

AT a meeting of the Auctioneers' and Estate Agents' Institute, held on November 2, Mr. John A. Rosevear gave an address entitled "Compulsory Town-Planning and Future Estate Development," in the course of which he said the style of architecture and character of buildings in estate development had generally been left hitherto to the taste, good, bad, or indifferent, of the individual estate owner or his professional advisers, with sometimes, it must be admitted, dire results. Under a town-planning scheme a certain amount of control might now be exercised by the local authority; to what extent was a matter for the future to decide. In the Ruislip-Northwood scheme the council was given certain powers in that respect, and, having regard to that and to the fact that the regulations as to procedure laid down that architectural societies might make representations during the progress of a scheme, it might be taken for granted that in approving the compulsory schemes the Ministry would carefully consider not only the suggested provisions covering architectural design and character but any objections, adequately supported, against them.

The clause sanctioned in the Ruislip-Northwood scheme was fairly wide, running as follows: "If, having regard to the nature and situation of the site of any building or buildings proposed to be erected or altered, or to the character of any buildings erected or in course of erection in the neighbourhood of such site, the council is of opinion that the character of the building or buildings proposed to be erected or altered would be injurious to the amenity of the neighbourhood, whether on account of the design or the undue repetition of the design or the materials to be used, the council may require such reasonable alterations to be made in regard to the design or materials as they may think fit, and may require the plans to be amended accordingly." In case of dispute the President of the Royal Institute of British Architects was to appoint a single arbitrator, whose decision would be final and conclusive.

Such a clause undoubtedly gave a local authority certain jurisdiction over the design of elevations of proposed buildings and the choice of materials used in such elevations and roofing, even if not in the case of all other material. It was of interest to note also the reference in the clause to "repetition of the design," which, if wisely administered, would be an undoubted improvement, and would prevent the erection of the often hideous rows of stereotyped houses to be found in their thousands in most of the suburbs of London and many provincial towns.

The East Birmingham scheme contained a provision bearing upon the question, to the effect that no owner was allowed without the sanction of the local authority to erect more than eight dwelling-houses under one continuous roof, and stipulating a space of at least 6 ft. between such blocks. Architectural effect was referred to in the North Yardley scheme, which contained a clause allowing a break forward beyond the building line not exceeding 5 ft., by sanction of the local authority, provided that a corresponding breakback behind the building line, to allow a similar unbuilt-upon area, was arranged.

Under the Ruislip-Northwood scheme the height of buildings to be erected was restricted, with certain specified exceptions, and no building might be subsequently increased in height. The main provision in that respect prevented a greater height in the case of all new buildings, except public buildings or those of the warehouse class, than (*a*) 60 ft., exclusive of two stories in the roof and certain architectural features, *e.g.*, towers or turrets, and (*b*) the distance from the main front wall of the building to the opposite boundary of the street it fronted. In the latter case the height was to be measured from the street level to the eaves or parapet, or to half the height of the gable, whichever was the higher.

A recent draft scheme he had examined limited the height allowed to 25 ft. (measured

in the same manner as in the last case), or the distance from the main front wall of the building to the centre line of the street in front thereof, whichever was the greater. The Margate scheme limited height to 60 ft., exclusive of towers, &c., and stated that in streets of less width than 40 ft. no building should exceed in height the distance from centre of street to the main front wall of building.

It would be seen, therefore, that future schemes were likely to contain a height limitation, and, unless special circumstances were present, it did not appear likely that "sky-scrapers" in a scheme would be approved by the Ministry.

The prohibition of control advertisements and hoardings for advertising purposes seemed likely to be a provision in most town-planning schemes, for a clause to that effect was inserted in both the Ruislip-Northwood and East Birmingham schemes. The amenities of the area covered by a scheme would thus be protected, and many of the eyesores suffered to-day would be prevented in future.

The expense of promoting and carrying a town-planning scheme through to final approval need be merely a comparatively small amount, and was met from the ordinary district rate of the local authority. A scheme, when approved and operative, did not necessarily entail the immediate construction of the roads and work upon open spaces, nor the erection of public buildings, &c., as planned in the scheme, but merely set apart such areas for future construction as the needs of the district arose, and controlled the future development in accordance with the final map as approved by the Ministry of Health. In reality a town-planning scheme was of the truest economy—it provided for and enabled future widenings of roads to be effected as the necessity arose, instead of the extremely high cost in compensation for demolished buildings and trade disturbance having to be paid, which had been the experience of most towns. That aspect of the case was forcibly brought to notice, and the need for a long-sighted view in town-planning was realised at the present time by reason of the extension of the Golder's Green tube to Edgware, now rapidly proceeding. That line was cutting diagonally through portions of Golder's Green and Hendon which were developed with villa residences a few years ago, and the bill for compensation would be very heavy, quite apart from the loss of amenity entailed. A great part of that might have been avoided if the local authorities some years back—acting with the railway company—had carried through a town-planning scheme for the area, reserving a tract of country for future extension of the line. The planning of the building development would then have had regard to this reserved area, the amenities would have been preserved, and much money saved.

Discussion.

In the course of the discussion, MR. ARTHUR C. DRIVER said he was not quite certain that the provision of large open spaces such as the Act provided was really going to tend for good in the future. What he had in mind especially were some of the large suburban districts close into London which had seriously depreciated and deteriorated within the last generation. In North London he need only mention Paddington, and in South London, say, Brixton.

MR. WILLIAM C. THORNTON said it had been his duty in connection with many estates to come into contact with two local authorities who were very active on town-planning schemes, and the result of his negotiations was that they were prepared to be most reasonable.

MR. H. E. JOYCE said he thought the maximum of twenty houses to the acre laid down by the Act was quite enough. As they built away from towns there was no reason why they should not build eight to ten houses to the acre.

MR. W. R. DAVIDGE said if landowners put up their own schemes they could considerably expedite matters. He felt that the new procedure was very much simpler than the old, but still there was too much "red tape" about it. The Town-Planning Acts, as interpreted by the Ministry, only applied to land that was available and likely to be used for building purposes. The Ministry was advised, apparently, that the inner area was not likely to be so used. Upon that, he would ask them to take a walk down Regent-street. They must consider the inner portion, and it was one of the points that would have to be taken into consideration.

MR. H. V. LANCHESTER (President of the Town-Planning Institute) said there were a lot of elaborate regulations about the number of houses and the area they were to cover, and the height the houses were to take. He always wanted to put that in one lump, but on one acre they should have so many cubic feet of building, say 200,000 or 300,000 feet, that should not be exceeded. Give people a certain amount of freedom whether they built three stories or two stories or whether they covered one-fifth or one-quarter of their area, and they might have a limitation that not more than a third of the area should be covered. It seemed to him they would get much more flexibility and much more simplification by cubic contents rules. It might not make for beauty, but they could deal with that afterwards. They could only get beauty if people wanted beauty. He thought the taste for decent, pleasing-looking houses had grown up in the last ten years to a most remarkable extent. He sympathised with Mr. Davidge's reference to Regent-street, and thought we required more comprehensive and imaginative planning with regard to the linking-up of the existing cities with the new areas.

HOUSING AND TOWN-PLANNING NOTES.

Town-Planning: Its Effect on Trade.

Following on the town-planning lectures given to the members of the Southend Rotary Club, the Institution of Sanitary Engineers, and the residents of the Rochford Hundred, Mr. S. A. Hill-Willis has accepted an invitation from the chairman of the Speakers' Committee to lunch at the Hotel Cecil on January 5 next, and it has been arranged for him to address the members of the Rotary Club of London immediately after the luncheon. The subject will be "Town-Planning: Its Effect on Trade," and will include reference to reinforced concrete carriageway construction.

Mr. Hill-Willis is the engineer of the Tilbury Council and its development works, which include some seven miles of complete reinforced concrete carriageways. He is also town-planning adviser in connection with some thousands of acres adjoining the County Borough of Southend on behalf of the Rochford Rural District Council.

The Devastated Areas of France.

The General Council of the North of France, at its meeting on October 4, decided to earmark a sum of twenty-seven million francs, resulting from the profit on munitions, for the Departmental Office of Cheap Houses, to be divided between the municipalities and the different organisations, for the construction of cheap houses. The General Council will ask the Minister of Agriculture to exercise the right of the State to purchase at a given price for the benefit of a department, in respect of the acquisition of the Castle of the Hermitage, at Condé-sur-Escaut (the sequestrated property of the princes of Croy-Dulmen). The Council proposes to convert this castle into a sanatorium for the prevention of consumption.

Management of House Property.

In view of the extension of municipal house ownership, the problem of property administration has assumed great importance, and Mr. Edgar L. Chappell, F.S.S., in a pamphlet entitled "The Management of House Property" (Cardiff: Welsh Housing and Development Association, 38, Charles-street, price 6d.), has given a few observations, chiefly for the guidance of municipal bodies. He sets forth, amongst other useful information, the aims of house management, the duties of house managers, and the need for tenancy regulations. He believes, in order to ensure success, where housing schemes are sufficiently large, that direct management by full-time officials is the most advantageous method, and local authorities are recommended generally to adopt the house-to-house system of collecting rents, as soon as possible after the tenants have received their wages.

Land for Development at Weston-super-Mare.

Mr. Howard Martin, Official Arbitrator, has issued his award in a claim against the Weston-super-Mare Urban District Council by the Weston-super-Mare Hotel, Ltd., M. A. Wilson, E. K. Dyer, and K. M. Rogers as mortgagees and debenture holders, concerning the Council's compulsory acquisition of part of certain lands known as Rogers' Field, situate on the south side of South Parade. The Council has acquired the area for development purposes under its Act of 1914.

The award is as follows:—"That the Acquiring Authority is to pay the claimants the sum of £2,640 as compensation, it being agreed that the Acquiring Authority is to make and maintain a footpath from Royal Parade to South Parade in the position shown on the plan produced at the hearing, and enclose it with a permanent unclimbable iron fence of a pattern to be agreed between the parties, and I order the Acquiring Authority to pay the hearing fee and to contribute £73 10s. towards the costs of the claimants."

Tyneside Town-Planning Scheme.

Major H. W. Taylor presided over a conference of the North Tyneside Joint Town-Planning Committee, held on October 31, when the interim report for submission to the Ministry of Health was considered.

The chief features of the sub-committee's recommendations are:—

Height of Buildings.—That the height of buildings to the eaves shall not exceed two-thirds of the prescribed width of the street (including forecourts) on which they abut, subject to the height of the eaves of any building being not more than 85 ft., and subject to the approval in exceptional cases of the local authority and to a right to appeal to the Ministry of Health.

Buildings in Blocks.—That there shall not be more than eight self-contained houses, or sixteen flats, in one block of dwelling houses in any street, and with a space of not less than 8 ft. between each block.

Building Lines.—That the distance of the building line behind the street line in any road shall not be less than 15 ft.

Space between Frontages.—That the minimum distance between buildings abutting upon any street shall be 70 ft.

Number of Houses to the Acre.—That the number of dwelling houses on a land unit on the average to the acre throughout such land unit shall not be more than fifteen self-contained houses or twelve houses in flats, nor more than twenty self-contained houses or fifteen houses in flats on any one acre.

Area of Site.—That the proportion of land within the curtilage of the site of a dwelling house to be covered by buildings, including all office buildings and out-buildings, shall not exceed three-eighths of the whole area of the curtilage.

Arterial Roads.—Minimum width, 60 ft.; secondary roads, 45 ft.

Open Spaces.—That each local authority shall define the areas or open spaces (which should preferably be situate in the immediate vicinity of the population to be served and should, as regards extent, be selected with that object in view), on the basis of one acre of public open space for every 400 of population ascertained on the estimated population when the area is fully developed, it being understood that the application of this principle must be dependent upon special local circumstances.

The sub-committee also recommended that districts be zoned to provide respectively for (*a*) industrial areas, for heavy industries with such houses as may in the opinion of the local authority be necessary and unavoidably incidental to the carrying on of any particular industry; (*b*) exclusively residential areas; (*c*) mixed areas (*i.e.*, both industrial and residential) in which the erection of factories shall be permitted if the factories, in the opinion of the local authority, are not offensive.

THE BUILDING TRADE.

THE NATIONAL HOUSING POLICY.

THE National Federation of House Builders desires to draw the attention of all candidates and voters in the coming General Election to the necessity of a national housing policy being adopted which will produce houses with the greatest rapidity and with the least expense to the public purse.

"The disastrous condition of the present housing position in both town and country," says the Federation manifesto, "is a menace to the nation. Before the recent legislation affecting land and houses was passed, the savings of the people were invested in houses to the extent of upwards of £20,000,000 every year. From 80,000 to 100,000 houses were built yearly, and the free competition of private enterprise led to a progressive improvement in the standard of housing. The houses erected in this country by the house builder immediately before the war were better houses for comfort and convenience than have ever been erected, and were the cheapest in the world.

"The result of the legislation has been to drive all investors away from house property, and while the restrictions continue private enterprise cannot build houses to let to tenants, for investors will not buy them. Private builders cannot compete with municipal houses which are let at uneconomic rents, and the largest source of supply has been stopped. Every house let at less than an economic rent is an indirect subsidy to the tenant and has to be paid for by his neighbours. The housing programme of the late Government has resulted in a loss to the public of £600,000,000, which will have to be paid for by a charge of ten millions a year for the next sixty years; and the shortage is greater than ever, for the houses built are not sufficient to provide accommodation for the increasing population. The living conditions of the people have been thrust back for a generation by the failure to realise that if investors are driven away houses cannot be built. The greatest problem which the new Government will have to face will be the housing question. If it is approached from a broad-minded and generous standpoint the difficulty is not insurmountable. If the appended programme is adopted, there will be a rapid increase in the building of houses of all sizes, and in the course of a few years the housing shortage will become a thing of the past:—

"1. All restrictive legislation should be withdrawn at the earliest possible date. This would tend to restore the confidence of investors, more houses could be built and rents would rapidly find an economic level. There can be no unduly high rents when a good supply of houses is forthcoming.

"2. All loca authorities which build houses in the future should be compelled to charge economic rents, except for the clearing of slum areas. If the local authorities can build houses and let them at any rent which the council think fit, it means a loss to the general ratepayer, it pauperises the tenants, it encourages jobbery in local elections, and it prevents private enterprise from building similar houses in the same district.

"3. If any State assistance is granted for housing, it should be granted equally to all agencies building houses of a good type. State assistance for housing is now practically suspended, and if costs can be reduced it will not be necessary in the future. If it is necessary, it should be given equally to all agencies building a good house under improved conditions. In this way only can private enterprise compete on equal terms with local authorities, and every available agency be enlisted to build houses quickly.

"4. Every endeavour should be made to encourage the people to invest their savings once more in house property. An active market for the sale of cottage property in small lots existed before the war. In this way the people were supplied with houses. House property still remains the soundest form of security, if it is safe from political attacks. The confidence of investors will be restored when a strong Government declares its intention of fostering the investment of capital in house property. When investors buy houses they can be built in great numbers.

"5. All methods of encouraging the citizen to purchase his own house should be examined and adopted if they promise to add to the available housing accommodation.

"6. Local authorities should revise their by-laws in order to cheapen the cost of building and road-making, so that houses can be let or sold at a reasonable figure.

"7. Localauthorities should be empowered to lend money on mortgage to responsible builders developing estates and erecting houses of approved types.

This can be done without loss to the rates and will enable many houses to be erected of the best type; the more houses built, the cheaper they will be."

ENGINEERS' CONTRACTS.

MR. ROBERT FORTUNE, Barrister-at-Law, at the annual general meeting of the Institution of Heating and Ventilating Engineers, read an interesting paper, entitled "Some Points in the Law of Heating Engineers' Contracts," in which he reviewed many of the cases on the subject of engineering contracts. As a heating engineer would generally be employed as a "specialist" and not be in control of the works, the first part of the paper was of most interest as it dealt with that difficult question, the position of the specialist under building contracts; we are sorry the author did not more elaborate this theme before passing to those cases which relate to engineers controlling constructional works and occupying much the same position as does the architect in building contracts.

On the first point, Mr. Fortune referred to several cases (including Hobbs *v.* Turner, Crittall *v.* London County Council and Hampton *v.* Glamorgan County Council), and observed that the latter case "emphasises the importance of the specialist having a contract which cannot be disputed as having been made with the building owner either by the owner himself or by his architect or consulting engineer under an express authority given for that purpose." We agree that it is of the first importance to the specialist that he should know to whom he is to look as the principal, and in this respect he is often placed in a difficult position, as the contract between the building owner and the contractor is in existence before he comes upon the scene, but a study of the cases will show that sometimes the difficulty has been occasioned by the contractor becoming insolvent, at others by the insolvency of the building owner and an endeavour being made to show that the contract applied to make the remaining solvent party liable.

The decisions, and notably that in the House of Lords in Hampton *v.* Glamorgan County Council (1917 A.C. 13) which overruled Crittall's case (see *The Builder*, March 2, 1917), have done something to show the construction the Courts will place on contracts containing clauses as to specialists and sub-contractors, but the layman will still find it difficult to determine for himself who is to be looked to as the principal by him; this is the important point for him to be assured of before tendering, for he must also consider whether the party who is principal is one to whom he will be content to give credit for payment. It is, therefore, essential that all the accepted forms of contract should deal with this point, who is to be principal, clearly and distinctly and in the light of the decided cases, as this will save litigation. But, as we have already pointed out, litigation has resulted in the past from two causes—first, obscurity in the contract as to who is to be deemed the principal, and second from the desire of sub-contractors, when one of the parties has proved insolvent, so to interpret the contract as to make the remaining solvent party liable. In Hampton *v.* Glamorgan County Council it was the contractor who became insolvent, and this was also the case in Crittall's case, but in Ramsden & Carr *v.* Chessum (see *The Builder*, June 2, 1916) it was the building owner.

The specialist cannot very well pick and choose to whom he will give credit when supplying work and material under a building contract, but he is entitled to know when tendering who is the principal under the contract, and if this is clearly defined he must decide once and for all whether the principal is or is not a person to whom he can safely give credit. As we read Mr. Fortune's observations he advises that the specialist shall be assured he is contracting with the building owner, but we think this advice may be amplified by the observations that we have made above, that he must be assured with whom he is contracting, be it building owner or contractor, and be in a position when tendering to decide whether he will give credit to the party thus named as principal in the contract. We are glad Mr. Fortune in his paper has again drawn attention to a subject which is of the utmost importance, but which has recently not been much discussed.

LONDON MASTER BUILDERS' SPORTS ASSOCIATION.

Week ending November 4th, 1922.

	P.	W.	L.	D.	Goals. F.	A.	Pts.
Perrycobow ..	3	3	0	0	10	7	6
Trocoll ..	1	1	0	0	1	0	2
Higadillo ..	1	0	1	0	2	3	0
Holloway's ..	2	0	2	0	3	5	0
Holancube ..	1	0	1	0	2	3	0
Minter	1	0	1	0	2	3	0

RESULTS OF MATCHES TO DATE.

Trocoll	1	Holloway's ..	0
Perrycobow ..	3	Higadillo	2
" ..	4	Holloway's ..	3
" ..	3	Holancube ..	2

[This League was formed in 1921 at the suggestion of Mr. Dudley Bartlett Managing Director of Messrs. Perry & Co. (Bow), Ltd. All contracting firms are invited to join. The address of the Honorary Secretary is No. 56, Victoria-street, S.W.]

Housing Tribunal Reconstituted.

The Ministry of Health announces that the Tribunal appointed under the Local Authorities (Assisted Housing Schemes) Regulations, 1919, to settle differences of opinion that might arise between the Minister of Health and local authorities on matters involved in determining the amount of Exchequer subsidy payable, has been reconstituted as follows: Chairman—Sir Theodore Chambers, K.B.E.; Members—Sir Alfred Gelder, F.R.I.B.A. (nominated by the Association of Municipal Corporations), Mr. John Bond, O.B.E. (nominated by the Urban District Councils' Association), Lieut.-Colonel Seymour Williams (nominated by the Rural District Councils' Association), Sir Edwin Savill, F.S.I., and Sir John Henry, J.P. (nominated by the Minister of Health).

Since the Tribunal was set up it has made forty-nine awards, and has visited the districts of local authorities in various parts of England and Wales, inspecting houses built under the Assisted Housing Scheme, and investigating other fac tors relevant to the making of impartial decisions.

NOTES ON VENTILATION.*

Designing Installations.

THE designing of a ventilating installation, whilst being governed by general principles, is also, one might say, controlled by the important question, "Is it an existing building or is it one proposed or in course of erection?" To take the latter first, we have for guidance general principles and past experience upon which to design our installation, and then there remains collaboration between ventilating contractor, architect, and builder.

To commence with we have presumably a very complete set of building plans, showing clearly the rooms or various parts of the building to be dealt with and from which the cubic contents may be obtained. In addition, one should obtain, if at all possible, particulars of the probable use of each part of the building, and, if only an approximation, the number of persons likely to be accommodated. This enables a comparison to be made between volume based upon a certain number of changes per hour and volume based upon a certain quantity of air per person per hour.

Volumes giving less than two changes per hour are not advisable owing to the difficulty of obtaining effective distribution of the fresh air. At the same time, the volume may be kept as low as possible commensurate with providing good and efficient ventilation as a sure means of keeping capital outlay and running costs down to the minimum. Another point of importance is that the space required to accommodate the plant is smaller.

In dealing with new buildings—that is, buildings in course of erection—greater latitude is generally available, and within reasonable limits one can state space required, position, and other important factors, and arrangements are made accordingly. There is, however, occasionally a tendency to sacrifice the efficiency of a ventilating installation to æsthetic requirements or to make the provision of other requirements more easy. These departures from original lay-out are to be deprecated if it is at all possible to avoid them, for they will invariably lead to trouble and need for adjustment after the plant is started up. To remedy defects from such causes can be, and have been, an expensive matter.

Usually with new buildings the space available for the plant is stated, and the chief matter upon which negotiations with those concerned proceed is the run or lay-out of the ducts, or flues, for the conveyance of the air to the various points of distribution. Endeavours to introduce obstructions or right-angle bends in ducts because "they look better" should be very strongly resisted, for it is impossible to produce an efficient installation by so doing, and it must be remembered that every such obstruction or bend adds to the running costs.

Existing Buildings.

In dealing with existing buildings it can be stated that generally the designing of an installation is in some respects simpler, although the actual carrying out of the work will be more difficult than with new buildings. No matter how good the drawings of a building may be, the design of a ventilation installation for an existing building should never be completed without close inspection of all parts during the time the building is actually in use. This is a far better guide to the requirements than merely figuring upon cubic contents or number of persons, although it is not, of course, suggested that these can be ignored.

Having inspected the building and obtained the information necessary it is possible to approximate the volume per minute to be introduced, which at once enables one to state approximately the space required for the accommodation of the necessary plant. From this also is obtained the approximate sizes of the various main and branch ducts. Then, in considering where the plant may be placed, due regard may at the same time be given to the possibility or otherwise of getting the ducts in to communicate between the plant and the points of distribution. Consideration of the plant position cannot usefully be given without conjointly considering the run of the ducts. It will generally be found to save time and trouble if all parts comprising the installation are approximated and the whole job mapped out in rough outline before finally setting the complete job out in detail.

Design of Distribution Ducts.

The designing and proportioning of the air distribution ducts has a very important bearing on a complete installation, and this may be summarised as follows:—

(1) Efficiency of installation in regard to ventilation as distinct from power consumption.
(2) Capital outlay.
(3) Silent operation.
(4) Cost of running the installation.

Under the first heading great care should be exercised to see that the ducts are constructed smoothly inside without obstruction to cause eddy currents of the air and so loss of effective pressure. The ducts must be correctly proportioned so that each branch will carry the requisite amount of air to the various points of distribution. All bends or changes in direction to the air flow should be made easy and gradual. Where the path of the air has to be turned through an angle of 90°, the back or outside of the bend must be curved and the inside of the bend must be curved or throated, such throat to have a radius not less than equal to the breadth of the duct. This applies whether the duct is circular, square, or rectangular. All joints in ducts should be close-fitting and made air-tight throughout the system. Ducts should always be constructed of galvanised sheet iron unless it is desired to adopt the more expensive method of galvanising after manufacture. Black or unprotected sheet iron or steel should never be used in a ventilating job, because in course of time the surface becomes oxidised and flakes off, with the result that the flakes are distributed about the system, which might be very objectionable, as, for example, if the air were being delivered to an hotel dining room or restaurant.

Capital Outlay.

As will be apparent, the smaller the ducts are made the lower the capital outlay, not only owing to the lower cost of the ducts themselves, but also by virtue of the fact that they will be simpler to install. Particularly does the latter remark apply to existing buildings. Nevertheless, with a given building and necessary volume, the duct dimensions cannot economically be reduced below certain limits because of the effect upon silent running and power consumed to run the plant. In installations for factories and works buildings silent operation is not generally a matter of importance, and in such cases the velocity of the air can be higher than in office and public buildings.

The frictional resistance of a duct varies as the square of the velocity. In other words, if we assume a duct that will carry a quantity of air at 1,000 lineal ft. per minute velocity for a loss of 1 in. w.g., and compare this with a duct having half the cross sectional area and carrying the same volume, thereby involving a velocity of 2,000 lineal ft. per minute, then the loss would be 4 in. w.g. With a given volume the power varies directly as the water gauge, so that in the cases cited it would take four times the power to get the same volume through the smaller pipe as compared with the larger. It will be seen that consideration of velocity of air movement throughout the system is essential.

For best results in office and public buildings the figures set out hereunder may be regarded as a useful guide, and should circumstances make it impossible to do otherwise the higher figures should never be exceeded.

Velocity of air	Lineal ft. per min.
In intake from fresh air to primary or pre-heater	1,000
Through primary heater	1,000-1,600
Through main heating battery	1,000-1,600
Through main air ducts	1,000-1,500
Through outlets (depending on height and width of room)	200-400
Through exhaust ducts	1,000

In factory installations a velocity of 2,400-2,600 lineal ft. per minute is used for main ducts. It will be appreciated that it frequently happens that for factory buildings the capital cost can become of greater consideration than in the case of office or public buildings, because factory buildings are so frequently on specially cheap rates for power and it becomes good policy to reduce capital cost in spite of increased power consumption. Smaller ducts with air at consequent higher velocity not only reduces the cost of the ducts but also directly affects the cost of the fan and motor to drive it. For a given volume, the higher the resistance against which the fan has to deliver this volume the smaller the fan required. Also, it operates at a greater speed or revolutions per minute, and this affects the cost of the motor when direct-coupled fan and motor are used.

The following figures taken from well-known makers' lists will illustrate the point clearly:—

	R.P.M.	Volume.	W.G.	B.H.P.
35 in. dia. fan	400	19,000	1¼ in.	6¼
30 in. dia. fan	600	19,000	2 in.	11

It will be found that a motor for the above powers at their respective speeds may be obtained from the same size or frame of machine, but there will be a reduction in the cost of the combined set of fan and motor in the second example compared with the first. As previously mentioned, if silent operation of the system is important then high velocities of air movement must not be used, and as a useful guide for silent operation the velocity figures given in the table may be followed.

Heating and Selection of Heaters.

A ventilation installation in a factory building is often used to advantage as a heating installation in the cold weather by introducing warmed air. This is termed indirect heating. In office and public buildings this is also done, but not so frequently. In this case the building would be heated by a method independent of the ventilation, such as hot-water radiators, and the air supplied for ventilation is slightly warmed, or "tempered" as it is termed.

When in cold weather the air of a ventilation installation is to be warmed, means to obviate "dry heat" should be taken. If the installation comprises an air washer or wet filter this provides a ready means to achieve the object. In this case the air is warmed sufficiently by the pre-heater, so that when the air comes into contact with the water evaporation of water takes place and the humidity of the air is thereby increased. The air then passes through another or final heater (or "re-heater," as it is sometimes called) and raised to the desired temperature. This final temperature is governed by the object to be achieved, that is, whether it has merely to be "tempered" or whether it has to be raised sufficiently in temperature to heat the building also.

For a heating medium we are really limited to hot water or steam—preferably of low pressure—circulated through radiators, of which there are a number of well-known designs eminently suited to the purpose. It is undesirable to have the temperature of the heating surface in excess of about 250 deg. F., as

[*The first part of this article was given in our issue for Sept. 29.]

higher temperatures cause carbonisation of dust particles and organic matter in the air, and unpleasant odour is often imparted to the air in consequence.

The operation of a hot-water system for the heaters does not require the skilled attention desirable or necessary with steam, and as a consequence under certain circumstances it has an advantage, but, on the other hand, a much larger heating surface has to be provided when hot water is used compared with steam. The square feet of heating surface with steam may be reckoned as roughly one-half to two-thirds of that necessary for hot water to produce the same temperature rise on a given volume of air. This is effected by the higher temperature difference between the steam inside the radiator and the air external thereto, and also the latent heat of steam given up when the change of state takes place from steam to water; in other words, when condensation takes place.

In designing heaters, two things have to be considered: (1) Space required, and (2) resistance to flow of air through the heater. Heaters are arranged in stacks, and the number of stacks necessary to produce a desired temperature rise will depend upon the velocity of air through the heater at which it is desired to operate. Hereunder is given a table to illustrate the variations which may be made in the arrangement of a heater to achieve the same result. The table is based on valuable information given in connection with the National Radiator Co.'s "Vento" cast iron section:—

Steam 5 lb. per square inch gauge pressure.
Air entering heater at 30° F. in all cases.

No. of Stacks	Velocity of air through heater.	Final temp. degs. Fahr.	Condensation of steam per sq. ft. lbs.	No. of sections per stack for 1,000 ft. per min.	Total sq. ft. of cub. heating surface.
1	200	81	.65	80	860.
2	1100	81	1.89	15	322.5
2	200	117	.56	80	1720
3	600	115	1.09	27	870.75
4	1200	115	1.63	14	602
5	1800	115	1.96	9	483.75

The above table serves to illustrate the greater efficiency from the point of view of heat transfer when working at the higher velocities, and the consequent saving in radiation surface. On the other hand, the increased velocity of the air and necessary greater number of stacks increase the resistance to the flow of air through the heater, and causes greater power consumption by the fan. It must be remembered at all times that the resistance (and consequently the power required) varies as the square of the velocity. A single stack heater would seldom, if ever, be used for a greater temperature rise than 30 degrees because of its low efficiency if the air is passed through at a lower velocity for higher temperature rise. The second part of the above table particularly emphasises the advantage of the higher velocity due to the much higher average condensation per square foot of surface. The average condensation is increased so much because of the big increase in the condensation obtained on the first stack, viz., the one which the air passes through first.

The following gives the condensation per square foot on the first stack relating to the six lines of the above table:—

1	.65	4	1.39
2	2.04	5	2.17
3	.65	6	2.54

It will be seen that a fairly wide variation is possible in a heating battery to obtain the same result, and therefore is of considerable assistance when there are limitations of space in which to put the plant.

Air Cleaning.

For best ventilation it is desirable that means should be provided to cleanse the air of dust and other impurities before it is distributed about the building. Various means have from time to time been adopted to do this, and undoubtedly the best method is the type of air washer now in general use. This consists essentially of bringing the air into contact with a large volume of water, generally in a finely divided state. Wet surfaces are also provided over which the air is compelled to travel. There are a number of air washers on the market at the present time, all claiming to be equally efficient as filters. Generally the variance is in constructional details, and the choice of any particular washer really becomes a question of price and personal preference. Points to be looked for are robust construction and protection against rust and corrosion; effective spraying nozzles, and efficiency of the means to filter the water where it is recirculated by means of a pump.

Selection of Fans and Motors.

The multiblade fan is undoubtedly the type of fan mostly in use at the present time on account of its higher efficiency and more silent operation. For economical reasons it should always be the aim to select a fan that will fulfil the required duty at, or very near, its rated capacity for highest efficiency. When silent operation is an important consideration, the installation should be so designed that the total resistance to the air is not more than 1 in. to 1½ in. w.g., and the peripheral speed of the fan not much more than 3,000 lineal ft. per minute—preferably less. Fans should be carefully and properly balanced with moving parts of robust construction and bearings of ample length with good oiling surfaces. Fans may be arranged for direct coupling to motors, or they may be driven by belt. Where speed control is possible, this should be provided. When a direct current electric supply is available speed control is best obtained by "shunt control." In such cases the motor is primarily designed to run at the minimum speed of the range of speed specified, and by the operation of "shunt control" the speed of the motor is increased with practically no change in the efficiency of the machine. An alternative method is "series control," where the motor is designed for the maximum speed and the speed is reduced by insertion of resistance in the electric circuit. This method, however, is wasteful, and except in the case of small fans and motors should not be used.

For exhausting air the propeller type of fan is generally adopted, but they are only efficient when drawing direct from the room or building without the interposition of long lengths of duct. The propeller type of fan is unsuitable, and uneconomical for overcoming greater resistance than about ½ in. w.g. Propeller fans may be arranged with direct coupled motor or for belt drive. Where direct coupling is used the motor is usually supported from the fan ring or frame, and the fan propeller is mounted direct on to the motor shaft.

Ozone.

Before concluding, reference may be made to the increasing and beneficial use which is being made with ozone in ventilating installations. Ozone is a changed or endothermic form of oxygen. Oxygen exists in air everywhere, but ozone, owing to its greatly enhanced oxidising properties, is only found in the atmosphere where impurities do not exist and where nothing is causing pollution with consequent absorption of ozone. Oxygen is expressed chemically as O_2 and ozone as O_3, and as such is an extremely unstable compound, the third atom readily combining with other bodies to form oxides.

Apparatus is manufactured for the production of pure ozone by electrical means and imparts an agreeable and refreshing odour to air and renders air healthful—minimising, if not destroying, the spread of certain diseases. Ozone has been proved to be of great value in destroying smells from kitchens, smoking-rooms, public conveniences, and the like. It has also been used with marked effect in the destruction of smells created by manufacturing processes, but here greater concentration of ozone would generally be used than is ordinarily required for general ventilation.

We have previously referred to ventilation by recirculation, and in such systems the use of ozone has been found to have very considerable value. The cost of running an ozone-producing plant is only a very small fraction of the total cost to run a complete ventilating plant. The use of ozone will often enable a better ventilation result to be obtained with a smaller volume of air than could be obtained with a larger volume without ozone.

It is hoped that the foregoing notes will be found of some little assistance to give guidance on general lines when questions of ventilation have to be considered. Technicalities have purposely been avoided, as these properly belong to the technical man, and, moreover, justice could not be done to the theoretical or technical considerations of any one part of a ventilation installation, such, for instance, as fans or ducts, without occupying considerably more space than has been taken in these notes for a general résumé of the subject.

ELECTRICITY CHARGES FOR SPECIAL PRIVATE PURPOSES.

The case Westminster Electric Supply Corporation *v.* Wykeham (*The Times*, November 3) raised a point of importance to professional photographers. The defendant was a professional photographer who used an arc light for the purposes of his profession. The plaintiff Corporation had charged him sevenpence per unit and were claiming £82 18s. 5d. for current thus supplied. The defendant admitted liability for £48 5s. 10d., but disputed the balance on the ground that he was entitled to be supplied at the rate charged for power which was twopence per unit.

The Court of Appeal affirming the Court below held that the current was supplied for power, but held that the Corporation had power to differentiate where there was a dissimilarity in the circumstances. Section 19 of the Electric Light Act, 1882, which provides against undue preference, is as follows: "Where a supply of electricity is provided in any part of any area for private purposes, then except in so far as is otherwise provided by the terms of the licence, order or special Act authorising such supply, every company or person within that part of the area shall on application be entitled to a supply on the same terms on which any other company or person in such part of the area is entitled under similar circumstances to a corresponding supply."

On the dissimilarity of the circumstances the Court of Appeal referred to the following principle stated by Mr. Justice Sargent in Long Eaton Gas Company *v.* Long Eaton District Council (1914, 2 Ch. 251), a decision confirmed by the Court of Appeal: "Upon that question (differentiation) I think the whole circumstances may be considered from the broadest possible point of view and that the question is whether the circumstances affecting consumer A and consumer B in relation to their supply of power are substantially dissimilar or sufficiently dissimilar to justify broadly the differentiation."

In that case the company were seeking to charge power at a different rate to consumers, who took both power and light, and consumers who took power only, and it was held the differentiation was not justified, but here the Court held that the circumstances of a photographer's business were sufficiently dissimilar from the ordinary use of power to justify the differentiation made by the Corporation, and that judgment had rightly been given for the plaintiffs, the Corporation.

A Builder's Estate.

Mr. William Stevens, of Spettisbury Lodge, Heathfield-gardens, Wandsworth Common, S.W., builder, left estate value £17,844.

NEW INVENTION.

Invisible Window Gearing.

The primary object of this invention is to enable inaccessible windows to be opened and closed, locked and unlocked, from a convenient point without the use of rods, worms, cranks, or cords, all of which gather dust.

The sketch illustrates the mechanism applied to the fanlight of a ward sash window, but the device is equally applicable to any form of casement, whether hung at top, bottom, centre, or side, as well as the "Austral" type.

In the case of roof-lights, &c., the operating cables are run in steel tubes in the thickness of the plaster, similar to electric light wires, with inspection-boxes and pulleys at acute angles.

The bottom drum to which the handle and cable are attached has one-and-a-half turns of the latter round it, giving the handle a clear revolution. The handle is at the bottom position both when the window is closed and open.

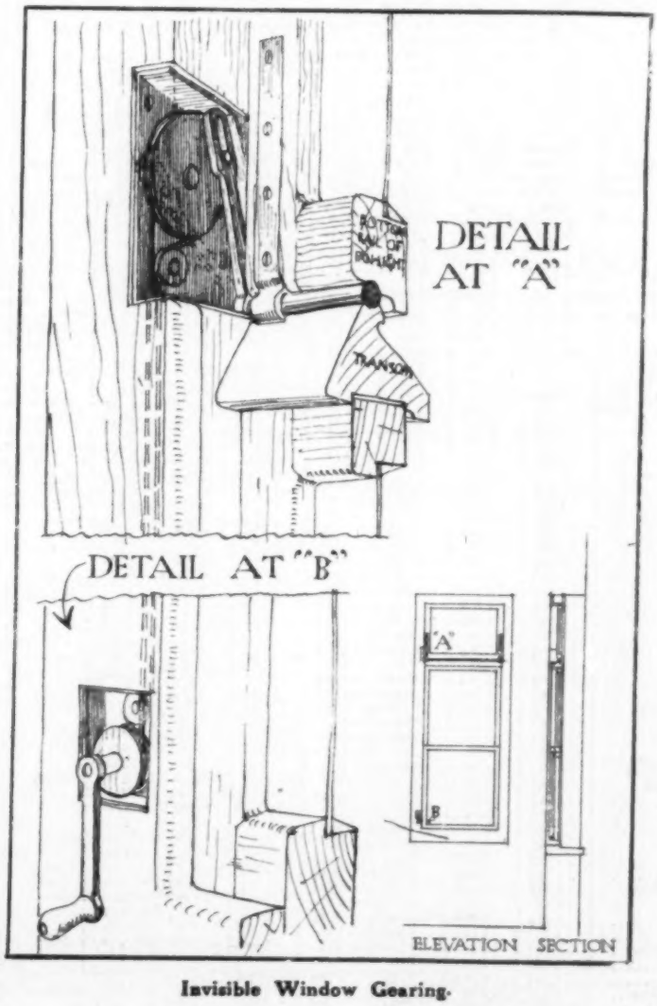
The small pulley adjacent to the handle drum is a jockey to give close alignment to the upward and downward portions of the cable, which is a continuous wire, the ends being joined by a right and left threaded strainer (not shown). The cable runs in a vertical groove in the window frame, covered by the retaining fillet of the lower sash.

At the top the cable passes round, and is keyed to, a wheel double the diameter of the handle drum, thereby rotating it half a revolution. The stud on this wheel carries the slotted arm with it. The fulcrum of this arm is a bar forming the pivot of the fanlight and extending the full width of it to a bearing in the opposite jamb. This bar is attached to the fanlight by adjustable countersunk iron straps, which relieve the latter of all torsion.

It will be noted that in either the open or closed positions the stud is equidistant with the axle of the wheel to which it is fixed from the fulcrum of the slotted arm, thereby giving a perfect lock; also, owing to its semi-circular path, it exerts its maximum leverage when commencing and completing its operation. This, combined with the two-to-one gearing of the pulleys, makes the action particularly smooth.

The whole mechanism is enclosed in cast-iron boxes with removable covers (omitted in sketch), sunk flush in the frame, the only moving parts exposed being the handle and the fanlight itself.

This type is being used at the new premises of the Victoria Hospital for Children, Tite-street, Chelsea, to the satisfaction of the architects, Messrs. Young & Hall. The inventor and patentee is Mr. John E. M. Macgregor, A.R.I.B.A., of 7, St. Peter's-square, W. 6; and the gear is being produced and marketed by Messrs. Light Steelwork, Ltd., 178, York-road, King's Cross.



Invisible Window Gearing.

NEW BUILDINGS IN LONDON.

EDGWARE-ROAD AND BURWOOD-PLACE, W.2.—Mr. Horace V. Clogg, Vallance Works, Vallance-road, E. 1, is carrying out the work at 125, Edgware-road and 12, Burwood-place, W. 2, which consists of the demolition of existing premises and rebuilding for the multiple boot firm, Messrs. Lennards, Ltd., of Queen's-road, Bristol. The principal sub-contractors are: Steelwork, Messrs. Redpath, Brown & Co., Ltd.; ceramic front, Messrs. Carter & Co., Ltd., of Poole; fireproof floors, Messrs. The Kleine Flooring Syndicate, Ltd.; and artificial stone, Messrs. The Empire Stone Co., Ltd. The architects are Messrs. Bridgman & Bridgman, FF.R.I.B.A., of Devon Chambers, Paignton, Devon; and the quantity surveyor is Mr. E. R. Babbs, of 10, Old Burlington-street, W. 1.

THE WHITE CITY.—The White City at Shepherd's Bush has been purchased by Mr. Eustace Gray, of the Holborn Empire, for £500,000. The purchase was a private venture. It is Mr. Gray's intention to run the White City as an exhibition, much on pre-war lines. The work on the buildings, furnishing, &c., will be started immediately.

FULHAM-ROAD.—The tender of Mr. W. A. Taylor, North Finchley, N. 12, has been accepted in connection with the addition of two shops and a new entrance to 643, Fulham-road, S.W. 6, for the Trustees of the Fulham and South Kensington Y.M.C.A. Messrs. Kennard & Kennard were the architects.

WIMBLEDON.—A new secondary school for girls is, we understand, to be erected at Wimbledon, at a cost of £16,000.

REGENT-STREET, W.1.—Messrs. O. P. Drever & Son (Kettering), Ltd., are erecting the new shop premises at 225, Regent-street for Messrs. J. Stewart, Ltd., hairdressers. The architect is Mr. S. Gordan Jeeves, 4, George-street, W., and the elevation was by Mr. T. S. Darbyshire, A.R.I.B.A., M.S.A. The sub-contracts include the following:—Steelwork: South Wales Structural Co., Swansea; fireproof floors: Messrs. Homan & Rogers, London; sanitary work: Messrs. Mellowes, Victoria-street.

MARYLEBONE.—The rebuilding of No. 26, High-street, Marylebone, is shortly to be commenced by Messrs. O. P. Drever & Son (Kettering), Ltd., Mr. S. G. Jeeves is the architect.

SHEPHERD'S BUSH.—Messrs. W. Walkerdine, Ltd., 115A, Walmer-road, North Kensington, W. 10, are the builders in connection with the disinfecting station, Mardale Depot, Shepherd's Bush, for the Hammersmith Borough Council. The building is of brick with concrete and asphalte roof. No sub-contracts have been let.

POLAND AND D'ARBLAY STREETS.—Messrs. Townsend & Pearson, Ltd., Dean-street, W. 1, are erecting a building at Nos. 9, Poland-street, and 27, 28 & 29, D'Arblay-street, as a speculation of their own. The architects are Messrs. R. H. Kerr & Son, Grafton House, 2 & 3, Golden-square, W. 1. The building is faced on both frontages with Portland stone supplied and fixed by Messrs. F. J. Barnes, Ltd., 25, Nine Elms-lane, S.W. 8. The floors and roof are of steel and concrete construction; the steel is being supplied by Messrs. H. Young & Co., Ltd., 4–6, Wandsworth-road, Vauxhall Cross, S.W. The staircase and landings are constructed of artificial stone supplied and fixed by Messrs. Malcolm Macleod & Co., Ltd., Glen-road, Walthamstow, E. 17. The heating consists of sectional boiler in the basement with five radiators on each floor, 2 in. rising main from boiler reducing to 1¼ in. and 1¼ in., and serving the radiators with 1 in. drop pipes. This work is being carried out by Messrs. Henry White & Son, 55, Frith-street, Soho-square, W. 1. The whole of the front windows (except shop fronts) are fitted with steel casements supplied by the Crittall Manufacturing Co., Ltd., 246, High Holborn, W.C. The roof will be covered with Seyssel Asphalte. The basement floor will be finished with 1½ in. granolithic paving, and the five floors above will be laid with 1¼ in. wood blocks, herringbone pattern. The drains are of heavy cast-iron, the soil pipes of lead, rain-water pipes of cast-iron, first-class pedestal closets and lavatory basins on each floor. The plans have been submitted and approved by the L.C.C. as complying with their latest requirements.

NEW SOUTHGATE.—Messrs. Rowley Bros., Wood Green, N. 22, are erecting a new batch house at the glass factory, Bounds Green-road, New Southgate, for Messrs. Pickerdite & Co., Ltd. The building is of brick construction with reinforced concrete roof, and provision is made for a light railway to run over the top of the batch house for tipping materials through hoppers in roof. Messrs. Val de Travers are doing the asphalte work; and Messrs. Stuart's Granolithic are executing grano pavings.

ST. JAMES'S PARK STATION.—The engineers and contractors of the new office buildings over St. James's Park Station, for the Metropolitan District Railway, are Messrs. F. D. Huntington, Ltd., 11, Hanover-square, W. 1; and the architects are Messrs. Richardson & Gill, FF.R.I.B.A., 41, Russell-square, W.C. The engineer is Mr. S. Bylander. The building is rather an unusual structure. It is to be built on a series of 55 ft. 20-ton girders which span the track over St. James's Park Station. These girders have to be brought in from the street through a narrow aperture, and placed in position at night. A reinforced concrete raft is then built on these girders, and the building erected upon it. The steelwork is being fabricated by Messrs. Dorman, Long & Co., and erected by Messrs. Huntington. The heating sub-contract has been placed in the hands of Messrs. Rosser & Russell, Ltd., of 37B, Duke-street, W. 1; but the lighting and lifts sub-contracts have not yet been placed. The building is 220 ft. long by 53 ft. wide and six stories high. There is very little decoration except in the main entrance. The work is to be completed in eleven months

NEW BRIDGE-STREET.—The London, Chatham & Dover Railway Co. propose letting the site in New Bridge-street on building lease, and negotiations are proceeding which are likely to result in the site being let at an early date.

LAND FOR WATER-BOARD UNDERTAKINGS.

Mr. Howard Martin, Official Arbitrator, recently sitting at 5, Old Palace Yard, Westminster, heard four claims against the Metropolitan Water Board, concerning the compulsory acquisition of land and buildings in connection with the large reservoir at Littleton, authorised by the Board's Powers Act of 1921, and the extension of works at Walton-on-Thames under the 1915 Act. Three of the claims referred to the reservoir land, and the most important was that of Miss Burbidge and Mrs. Everett in regard to lands and farm buildings, cottages and garden ground, having an area of over 60 acres, and known as Littleton Park Farm, Shepperton. The claim amounted to £11,533 10s.

The Arbitrator, who reserved his decision, has since awarded that the acquiring authority is to pay the claimants the sum of £7,634 as compensation, the claimants to pay the costs of the acquiring authority.

Miss Burbidge made a claim in respect of the acquisition of Askham Manor Farm House, with buildings, garden and land, at Littleton. On behalf of claimant, Mr. Townsend Green submitted a valuation of £3,000, while Mr. Oxley's valuation for the Water Board amounted to £1,450. The arbitrator has awarded that the acquiring authority is to pay the claimant the sum of £1,700 as compensation, and to pay the hearing fee. Each party is to pay its own costs.

Mrs. Hamilton claimed in regard to the acquisition of land, house, garden, garage, sheds and private roadway, known as "Trenta," Littleton. Mr. Townsend Green, for claimant, valued the compensation payable at £2,655, while Mr. Oxley, for the Water Board, submitted a valuation of £1,400. The arbitrator has awarded that the acquiring authority is to pay the claimant the sum of £1,700, as compensation, and to pay the hearing fee. The claimant is to contribute £26 5s. towards the costs of the acquiring authority.

Mr. W. H. Shere made a claim concerning the acquisition of farm lands forming part of Apps Court Farm, Walton-on-Thames. On behalf of the claimant, Mr. G. F. Page (of Messrs. Nightingale, Page & Bennett, surveyors and auctioneers, of Kingston-on-Thames) submitted a valuation of £8,270. The arbitrator has since awarded that the acquiring authority is to pay the claimant the sum of £5,948 10s. as compensation, it being agreed that the acquiring authority is to give the claimant a right of cart road for access to the river bank, and to erect and maintain suitable fences and gates to enclose the road from the land to be acquired and the public footpath; the acquiring authority to pay the hearing fee and each party to pay its own costs.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons	Bricklayers.	Carpenters, Joiners.	Plasterers	Slaters.	Plumbers	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bath	1/5	1/5	1/5	1/5	1/5	1/5	1/5		1/0½	
Bedford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Birkenhead	1/10	1/10	1/10	1/10	1/10	1/10	1/10		1/5½	
Birmingham	1/8	1/8	1/8	1/8	1/8	1/9	1/8		1/3	
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/5½	1/4½	1/4½		1/0½	
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½		0/11½	
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Cambridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Cheltenham	1/5	1/5	1/5	1/5	1/5	1/5	1/5		1/0½	
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Crewe	1/6½	1/6½	1/5½	1/6½	1/6½	1/6½	1/6½		1/2	
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4		1/0½	
Grantham	1/6½	1/6½	1/5½	1/6½	1/6½	1/6½	1/6½		1/2	
Grays	1/8	1/8	1/8	1/8	1/8	1/8½	1/8		1/3	
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Great Yarmouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Guildford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4		1/0½	
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Lichfield	1/6½	1/6½	1/6½	1/6½	1/5½	1/6½	1/6½		1/2	
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Liverpool	1/10	1/10	1/10	1/10	1/10	1/10	1/10		1/5½	
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
London	1/8	1/8	1/8	1/8	1/8	1/8½	1/7		1/3	
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Luton	1/4½	1/4½	1/4½	1/4½	1/5½	1/4½	1/4½		1/0½	
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Norwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5		1/0½	
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5		1/1½	
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
St. Albans	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
St. Helen's	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Scarborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Stoke-on Trent	1/8	1/8	1/8	1/8	1/8	1/9	1/10		1/3	
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4		1/0½	
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4		1/0½	
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Torquay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Tunbridge Wells	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
York	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	

(For rates of wages in the Building Trade in Scotland, see page 717.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

NOVEMBER 13.—**Abertillery.**—HOUSES.—For erection of 24 houses under Rose Heyworth Housing Scheme, for Abertillery U.D.C. Tenders must be on "lump sum" basis. Mr. William Galt, Council Offices, Abertillery.

NOVEMBER 13.—**Colchester.**—FARM BUILDINGS.—Erection of cow-house and additions to farm buildings at Severalls Mental Hospital, for the Essex C.C. Mr. J. Stuart, County Architect, Old Court, Chelmsford.

NOVEMBER 13.—**Doncaster.**—HOUSES.—Erection of 20 houses in Lime Tree-avenue, for the T.C. Mr. R. E. Ford, Housing Surveyor, 3, Priory-place, Doncaster.

NOVEMBER 13.—**Grimsby.**—EXTENSION.—Extension to the kitchen at the rear of the ladies' lavatory in East Marsh-street, for the T.C. Mr. H. Gilbert Whyatt, Borough Engineer, 170, Victoria-street, Grimsby.

NOVEMBER 13.—**London, S.E.**—PAVILION.—Erection of a bowling green pavilion at Mountsfield-park, George-lane, Hither Green, for the London County Council. Chief Officer, Parks' Department, Room 393, The County Hall, Westminster Bridge, S.E. 1.

NOVEMBER 13.—**Oxford.**—VARIOUS WORKS.—For building and sanitary work at the schools, The Poplars, Cowley, for the B.G. Mr. W. Howes Linnell, Clerk, Guardians' Offices, Lloyds Bank Chambers, Carfax, Oxford.

NOVEMBER 13.—**Panteg.**—SWIMMING BATH.—Construction of open-air swimming bath at Griffithstown, for the U.D.C. Surveyor, Pontymoel.

NOVEMBER 14.—**Bangor.**—EXTENSION.—For extension of the Carnarvonshire and Anglesey Infirmary. Messrs. Rees & Holt, architects, 64, Rodney-street, Liverpool. Deposit £1 1s.

NOVEMBER 14.—**Bradford.**—REPAIRS.—For joiner's and plumber's repairs at the St. James's Market cold stores and abattoirs, for the T.C. City Architect, Town Hall, Bradford.

NOVEMBER 14.—**Cowdenbeath.**—HOUSES.—Erection of 16 houses, for the T.C. Mr. C. A. Alexander, Burgh Surveyor, Town House, Cowdenbeath. Deposit £2 2s.

NOVEMBER 14.—**Hexham.**—HOUSES.—Erection of 12 houses at Mickley-on-Tyne, for the Prudhoe Rural District Council. The Clerk, Council Offices, Prudhoe-on-Tyne.

NOVEMBER 14.—**Maesycwmmer.**—BUILDING.—For erection and completion of a detached residence at Maesycwmmer. Mr. John Jones, architect and surveyor, 80, Bedwellty-road, Pengam.

NOVEMBER 14.—**New Hucknall.**—HOUSES.—Erection of 100 houses near Welbeck Colliery, Warsop, Notts, for the New Hucknall Colliery Co., Ltd. Head Office, New Hucknall Colliery, near Mansfield. Deposit £5 5s.

NOVEMBER 14.—**Perth.**—PAVILIONS.—Erection of pavilions and other buildings on the grounds of the Perth and Perthshire Joint Sanatorium. Messrs. G. P. K. Young & Son, F. and A.R.I.B.A., 42, Tay-street, Perth. Deposit £2.

NOVEMBER 14.—**Rochdale.**—WALL.—Construction of a rubble retaining wall in connection with the extensions of the Sewage Works at Roch Mills, for the T.C. Borough Surveyor, Town Hall, Rochdale.

NOVEMBER 14.—**Sandown.**—REPAIRS.—For repairs to roofs of church, &c., for the Parochial Church Council of Christ Church. Mr. E. L. Smith, architect, Sandown.

NOVEMBER 14.—**South Croydon.**—CONVENIENCE.—For the construction of an underground convenience for women, and sundry work of alteration to men's convenience in roadway adjoining the Swan and Sugar Loaf Hotel, for the C.B. The Borough Engineer, Town Hall, Croydon. Deposit £1 1s.

NOVEMBER 15.—**Armley.**—PAINTING.—Painting, &c., of the interior of Aged and Infirm block (Old Board Offices) and Porter's lodge at the Poor Law Institution, Armley, for the B.G. Workhouse Master.

NOVEMBER 15.—**Dartford.**—HOUSES.—Erection of 16 houses (in blocks of 4) on the Lowfield-street Housing Estate, for the U.D.C. Mr. J. James Hurtley, Clerk, Council Offices, Dartford. Deposit £2 2s.

NOVEMBER 15.—**Huddersfield.**—BUNGALOW.—Erection of bungalow in Talbot-avenue. Messrs. J. Berry & Sons, architects, 3, Market-place, Huddersfield.

NOVEMBER 15.—**London, N.W.**—TELEPHONE EXCHANGE.—Erection of an exchange at Golders Green, for the Commissioners of H.M. Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

NOVEMBER 15.—**Newcastle-upon-Tyne.**—HOUSES.—Erection of 98 "A" type houses on the Walker Housing Estate, Newcastle, for the City Corporation. Housing Architect, 18, Cloth Market, Newcastle. Deposit £2 2s.

NOVEMBER 15.—**Reigate.**—STABLING, &C.—Erection of stabling, &c., at the New Pond Farm, Earlswood, Redhill, for the T.C. Borough Surveyor, Municipal Buildings, Reigate.

NOVEMBER 15.—**Rothwell.**—FLOORS, &C.—Laying of new floorboards and formation of open hoppers to the windows, &c., at Rothwell Council School. Education Department, County Hall, Wakefield.

NOVEMBER 15.—**Weston-super-Mare.**—PAINTING, &C.—(1) Painting and decorating; (2) provision of lavatories; (3) laying out of garden. Mr. T. Bradford Ball, architect, 75, High-street, Weston-super-Mare.

NOVEMBER 16.—**Devonport.**—REPAIRS, &C.—Renovations at the Children's Homes, 15 and 16, Cotehele Villas, for the B.G. Superintendent at the Children's Homes.

NOVEMBER 16.—**Llantrisant.**—CONVERSION.—For the conversion of the Victoria Buildings, Pontyclun, into offices, for the R.D.C. Mr. T. Saunders, Surveyor, Council Office, Pontyclun. Deposit £1 1s.

NOVEMBER 16.—**Penwortham.**—HALL.—Erection of St. Mary's Hall, Penwortham. Mr. Alfred C. M. Lillie, architect, Bamber Bridge.

NOVEMBER 16.—**Pontyclun.**—CONVERSION OF BUILDING.—For the work requiring to be done in connection with the conversion of the Victoria Buildings, Pontyclun, into offices for the Llantrisant and Llantwit Fardre R.D.C. Mr. Thomas Saunders, Surveyor, Council Offices, Pontyclun.

NOVEMBER 17.—**Newport (Mon.).**—HOUSES.—For erection of 50 houses on the Somerton Estate, for the Newport Corporation. Borough Engineer, 8, Corn-street, Newport (Mon.). Deposit £3 3s.

NOVEMBER 17.—**Pontypridd.**—PAINTING OF SCHOOLS.—For general painting, colouring and cleaning during the Christmas holidays of the following schools, for the Pontypridd Education Committee: Mill-street H.E. Schools, all departments; Pontshonorton Schools, manual training, girls' and infants' departments; Graig Schools, all departments; Hopkinstown Schools, infant department; Roman Catholic Schools, mixed and infants' department. Mr. W. E. Lowe, Surveyor, Council Offices, Pontypridd. Deposit £2.

NOVEMBER 18.—**Bromley, Kent.**—TEMPORARY EXTENSION.—Temporary extension of the County School for Boys, Hayes-lane, Bromley, for the Boro' Council. Borough Engineer, Municipal Offices, Bromley. Deposit £2 2s.

✱NOVEMBER 18.—**Edmonton, N.**—ALTERATIONS AND ADDITIONS.—Erecting and finishing for use an additional story over the Board Room block and certain alterations to the same, at 77, Bridport-road, Edmonton, for the Guardians of the Edmonton Union. Mr. E. Ridley, Clerk to the Guardians, 77, Bridport-road, N. 18. Deposit £5 5s.

✱NOVEMBER 20.—**Abergavenny.**—HOUSES.—Erection and completion of six houses in three blocks of two, off Penypound, Abergavenny, for the Corporation. Mr. Wm. H. Hopwood, Town Clerk, Town Hall, Abergavenny. Deposit £2 2s.

NOVEMBER 20.—**Dundee.**—CONCRETE WORK.—For reinforced concrete and other work required in connection with erection of public market, for the T.C. Mr. J. Thomson, City Architect, Dundee.

NOVEMBER 20.—**Poplar.**—ENGINE HOUSE, &C.—For the construction of an engine house in brick and concrete, with slate roof and foundations for engines, pumps, and auxiliary machinery, also construction of supply, suction and delivery culverts, &c., for the L.C.C. Chief Engineer of the Council, Old County Hall, Spring Gardens, S.W.1. Deposit £5.

NOVEMBER 20.—**Port Talbot.**—ERECTION OF CONVENIENCE.—For erection of public convenience and store at the Goytre Cemetery. Borough Surveyor, Municipal Buildings, Aberavon.

NOVEMBER 20.—**Wigan.**—CONVENIENCE.—Construction of a public urinal in Waligate, for the T.C. Mr. R. B. Donald, Borough Engineer, Municipal Buildings, Wigan.

NOVEMBER 20.—**Yeovil.**—HOUSES.—Erection of 20 non-parlour houses in Goldcroft, for the B.C. Messrs. Petter & Warren, FF.R.I.B.A., "Old Sarum" House, Yeovil. Deposit £2 2s.

NOVEMBER 21.—**Gellygaer.**—HOUSES.—For erection of 40 houses in blocks of four and two, types "A" and "B," on the Heolddu Site, Bargoed, for the Gellygaer U.D.C. Tenders to be submitted for houses in stone and brick alternately. Mr. P. Jones-Williams, Architect, Council Offices, Hengoed. Deposit £2 2s.

NOVEMBER 22.—**Harrogate.**—PAINTING.—For painting at Royal Bath Hospital, for Rawson Convalescent Home. Mr. E. P. L. Dixon, Secretary, Harrogate.

NOVEMBER 22.—**Kelvedon and Coggeshall.**—FARM BUILDINGS.—Erection of sets of farm premises at Kelvedon and Coggeshall, for the Small Holdings Committee of the Essex C.C. Mr. Chas. Lock, County Land Agent, Chelmsford.

NOVEMBER 23.—**Porthcawl and Southerndown.**—PAINTING.—For painting at the "Rests," Porthcawl and Southerndown, Glamorgan. Mr. J. B. Fletcher, architect, 21, Dumfries-place, Cardiff.

✱NOVEMBER 24.—**Flint.**—COTTAGES.—Erection of 6 semi-detached cottages, for the Housing Committee of the Borough of Flint. Mr. W. B. Edwards, A.R.I.B.A., architect, Halkyn-street, Flint. Deposit £2.

✱NOVEMBER 27.—**Wallasey.**—HOUSES.—Erection of 14 houses on the Mill-lane site. Housing Scheme, No. 2, Contract No. 7, for the County Borough of Wallasey. Borough Engineer and Surveyor, Town Hall, Wallasey. Deposit £2 2s.

NOVEMBER 27.—**Willesden.**—BRIDGE.—Widening of existing brickwork bridge carrying Dudden Hill-lane over the Midland & South-Western Junction Railway, for the U.D.C. Mr. F. Wilkinson, Surveyor, Town Hall, Dyne-road, N.W.6. Deposit £2 2s.

NOVEMBER 28.—**Bolton.**—BATHS.—Erection of public baths and washhouses in Moss-street, for the T.C. Housing Office, 14, Acresfield, Bolton. Deposit £2 2s.

✱NOVEMBER 29.—**London, E.9.**—REPAIRS, &C.—Repairing, pointing, &c., chimney stacks, reconstruction of latrines, and forming new staircase at the Branch Institution and Separate School of the Hackney Union at Brentwood, Essex. Mr. Frank R. Coles, Clerk to the Guardians, Clerk's Office, Hackney Union, 2, Sidney-road, E.9.

NOVEMBER 29.—**Thornaby-on-Tees.**—HOUSES.—Erection of 18 houses at the Thornaby-road Housing Site, for the T.C. Borough Engineer, Town Hall, Thornaby-on-Tees.

NOVEMBER 30.—**Barcelona.**—EXHIBITION BUILDINGS.—Construction of the Grand Palace of Nations in connection with the Barcelona Exhibition. Oficinas de la Exposicion, Barcelona. Tenders in French or Spanish to be delivered by hand. Copy of specification at Department of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 2.—**Brentford.**—HOUSES.—Alternative tenders for the erection of (*a*) 20 houses and (*b*) 38 houses on land fronting Challis-road and Clayton-crescent, Brentford, for the U.D.C. Messrs. Dodge & Reid, architects, 120, High-street, Brentford. Deposit £2.

DECEMBER 4.—**Milnsbridge.**—PAINTING.—For painting and decorating the Baptist Chapel. Mr. G. E Beaumont, Kirkfield, Cowlersley.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons	Bricklayers	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons	Bricklayers	Plasterers	Labourers
Aberdeen	1/7	1/10½	1/7	1/7½	1/8	1/9	1/7	1/2 to 1/4			
Airdrie	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2			
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2			
Arbroath	1/7	1/7	1/7	1/7	1/7	1/7	1/8	1/1			
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Bathgate	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2			
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/7	—			
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2			
Coatbridge	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Dumfries	1/6	1/6	1/6	1/6	1/6	1/8	1/8	1/2	1/2½	1/3½	
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Falkirk	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	—	1/1½			
Gainshiels	1/6	1/6	1/6	1/6	1/6	1/6	1/8	1/1½			
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3			
Greenock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/1 to 1/3			
Hamilton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Hawick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3			
Helensburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Inverness	1/6½	—	1/6	1/7	1/6½	1/7	1/8	10d. to 1/2			
Kilmarnock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Kirkcaldy	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2			
Kirkwall	1/5	1/5	1/4	1/7	1/5	1/5	1/4	1/2			
Lanark	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3			
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/2			
Motherwell	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3			
Perth	1/8	1/8	1/5	1/8	1/8	1/8	1/7	1/2			
Stirling	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Stirlingshire (Eastern District)	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			
Wishaw	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3			

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 716.

DECEMBER 15.—**Hertford.**—Provision and erection of a sectional stand and other accommodation to seat 400 people. Mr. H. J. Gray, "Salisbury Arms" Hotel, Hertford.

NO DATE.—**Cwmfelinfach.**—ALTERATIONS.—For converting the old premises of the Forestier-Walker Conservative Club (at Greenmeadow) into a dwelling-house. Mr. C. J. Byers, Secretary, Forestier-Walker Conservative Club, Cwmfelinfach, Mon.

NO DATE.—**Elland.**—PAINTING.—For painting and pointing eight houses at the Cross, Blackley, Elland. Messrs. R. Sykes & Co., 18, Station-road, Golcar.

*NO DATE.—**Monkseaton, Northumberland.**—CHURCH.—Erection of a Wesleyan Church at Monkseaton, Northumberland, to seat about 500, and a minor hall with caretaker's room above. Messrs. Marshall & Tweedy, architects, 54, Grey-street, Newcastle-upon-Tyne.

FURNITURE, MATERIALS, etc.

NOVEMBER 13.—**Desborough.**—CONCRETE SLABS.—Supply to the U.D.C. of 720 yds. super. of concrete paving slabs, 2 in. thick. Mr. D. Jenkinson, Surveyor, Council Offices, Desborough.

NOVEMBER 13.—**St. Marylebone.**—WOOD BLOCKS.—Supply to B.C. of 315,000 3 in. by 5 in. by 9 in. best selected Baltic yellow deal street creosoted paving blocks. Mr. J. Paget Waddington, Surveyor, Town Hall, Marylebone-road, N.W.1.

NOVEMBER 14.—**Dublin.**—MATERIALS.—Supply of stores to the Midland Great Western Railway of Ireland. Storekeeper, General Stores Department, Broadstone Station, Dublin. Schedules (45 in all), 6d. each.

NOVEMBER 14.—**Dublin.**—RAILWAY STORES.—Supply of stores for six months to the Dublin and South-Eastern Railway Co. Mr. R. D. Griffith, Secretary, Westland Row Station, Dublin.

NOVEMBER 14.—**Glasgow.**—MATERIALS.—Supply of materials to the Tramways Dept., for six months. Mr. James Dalrymple, General Manager, 46, Bath-street, Glasgow.

NOVEMBER 14.—**Hindley.**—ROAD MATERIALS.—Supply to the U.D.C. of granite setts, British Portland cement, broken aggregate for concrete, and screened chippings. Mr. O. F. Abbott, Surveyor, Council Offices, Hindley.

NOVEMBER 14.—**Manchester.**—MATERIALS.—Supply of turpentine (genuine American), Portland cement, and anti-friction white bearing metal. Mr. Henry Mattinson, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

NOVEMBER 15.—**Egypt.**—STORES.—Supply of stores to the Egyptian Postal Administration at Alexandria, including hardware, paints, &c. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

NOVEMBER 15.—**Leeds.**—MATERIALS.—Supply of 3,000 tons slag nuts, and 2,000 tons granite or Whinstone chippings, for the T.C. Mr. J. B. Hamilton, Commercial Manager, 1, Swinegate, Leeds.

NOVEMBER 17.—**Derby.**—SCHOOL FURNITURE.—Supply of school furniture to the Derbyshire E.C. Mr. Geo. H. Widdows, F.R.I.B.A., Architect, County Offices, St. Mary's Gate, Derby.

NOVEMBER 17.—**London.**—MATERIALS.—Supply to the High Commissioner for India of (1) glazed stoneware drainage pipes, &c.; (2) cast-iron pipes, socket and spigot, 15 in.; (3) railway wheel turning lathes, 48 in.; (4) d.c. low tension three-core and two-core cables. Director-General, India Store Department, Belvedere-road, Lambeth, S.E.1.

NOVEMBER 18.—**Hull.**—MATERIALS.—Supply of stores to the Electricity Department. City Electrical Engineer, Electricity Works, Sculcoates, Hull.

NOVEMBER 18.—**Lewes.**—ROAD MATERIALS.—Supply of granite, tarred macadam, tar, &c., to the East Sussex C.C. Mr. F. G. Wood, County Surveyor, County Hall, Lewes.

NOVEMBER 19.—**Broadstairs.**—ROAD MATERIALS.—Supply of road materials to the U.D.C. Mr. H. Hurd, Town Surveyor, Pierremont Hall, Broadstairs.

NOVEMBER 20.—**Brighton.**—GRANITE SETTS.—Supply to the Tramways Department of 700 tons of granite paving setts. Tramways Engineer, Lewes-road, Brighton.

NOVEMBER 20.—**West Hartlepool.**—MATERIALS.—Supply of road and other materials to the T.C. Depot, Burn-road, West Hartlepool.

NOVEMBER 21.—**Warrington.**—STORES.—Supply to the Cheshire Lines Committee of stores and materials. Stores Superintendent, Cheshire Lines, Warrington.

NOVEMBER 21.—**Wealdstone.**—ROAD MATERIAL.—Supply to the U.D.C. of 550 tons of ¾ in. to 2 in. mixed tar macadam (slag or granite), and 100 tons of ¾ in. tar macadam (slag or granite). Mr. Herbert Walker, Surveyor, Wealdstone.

NOVEMBER 22.—**London.**—MATERIALS.—Supply to the Bombay, Baroda and Central India Railway Co. of (1) Canvas, bunting, &c.; (2) india-rubber hose, sheeting, &c.; (3) red lead; and (4) dog spikes. Mr. S. G. S. Young, Secretary, The White Mansion, 91, Petty France, S.W.1. Charge 10s.

NOVEMBER 23.—**London.**—MATERIALS.—Supply to the High Commissioner for India of (1) Flexible steel wire rope, galvanised and ungalvanised; (2) copper tubing; (3) mantles for Kitson's lights; (4) mantles for Pintsch's oil gas lights, &c.; (5) buffers, wrought iron, and washers for buffer springs; and (6) axle-boxes, malleable cast iron or cast steel, for carriages and wagons. Director-General, India Store Department, Branch No. 12, Belvedere-road, Lambeth, S.E. 1.

JANUARY 31.—**Siam.**—RAILWAY STORES.—Supply to the Department of State Railways, Siam, of railway store materials. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W.1. Charge £2 12s.

NO DATE.—**Salford.**—RETORTS, &c.—Supply of retorts, firebricks, &c., for the Gas Department. Gas Engineer, Gas Offices, Bloom-street, Salford.

ENGINEERING, IRON AND STEEL.

NOVEMBER 13.—**Kensington.**—ROLLER.—Supply of a 10-ton (nominal weight) compound steam road roller, for the B.C. Borough Engineer, Town Hall, Kensington, W.8.

NOVEMBER 13.—**Margate.**—SEWAGE PLANT.—Supply of (1) oil engine and rotary pump, capable of lifting 1½ million gallons of screened sewage to a height of about 12 ft. in 2½ hours; (2) two mechanical screens and raking machinery, together with petrol engines for driving, for the T.C. Mr. Ernest A. Borg, Borough Engineer, 13, Grosvenor-place, Margate.

NOVEMBER 13.—**Somerset.**—BRIDGES.—(*a*) Strengthening of Clapton Bridge in reinforced concrete; (*b*) widening and rebuilding of Oathill Bridge in reinforced concrete, for the Somerset C.C. Mr. Edward Stead, County Surveyor, 49, High-street, Weston-super-Mare. Deposit £2 2s.

NOVEMBER 14.—**London.**—MACHINE TOOL.—Supply to the Bengal-Nagpur Railway Co. of duplex vertical boring and turning mill. Company's Offices, 122, Grenham House, Old Broad-street, E.C. Charge 10s. 6d.

NOVEMBER 14.—**Edinburgh.**—TRAMCAR BODIES.—Supply of 56 top-covered car bodies, for the Tramway Dept. Tramways Engineer, Edinburgh.

NOVEMBER 15.—**Port Elizabeth.**—SEWAGE LIFTING PLANT.—(*a*) Supply and erection at proposed pumping station of suitable pumping machinery, cast-iron rising main, foundations for plant, &c.; (*b*) an alternative tender for the supply only of machinery and pipes, for the Municipal Council. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

NOVEMBER 16.—**Hull.**—COOLING TOWERS.—Supply to the Electricity Department of four natural draught water-cooling towers. City Treasurer, Hull. Deposit £1 1s.

NOVEMBER 18.—**Johannesburg.**—TUBES.—H.M. Senior Trade Commissioner in South Africa reports that the Municipal Council of Johannesburg invites tenders for the supply and delivery at President-street Store of 128 large and 128 small solid drawn steel superheater tubes, 1½ in. outside diameter, No. 9 s.w.g. for 17,000 lbs. Babcock & Wilcox boilers, in accordance with drawing No. 1511, dated September 12, 1922. (Contract 977.) Sealed tenders on the proper form, and accompanied by a deposit of 10 per cent. of the total amount of the tender, to be sent to the Town Clerk, Municipal Offices, Johannesburg. The conditions of tender, &c., can be inspected by United Kingdom firms interested on application at the Department of Overseas Trade (Room 47), 35, Old Queen-street, Westminster, London, S.W.1.

NOVEMBER 20.—**Burton-on-Trent.**—ELECTRICAL INSTALLATION.—For the installing of electric light at the Imbecile Block, Poor Law Institution, for the B.G. Mr. H. S. Askew, Clerk, Union Offices, Burton-on-Trent.

NOVEMBER 20.—**Durham.**—PIPES.—Supply of 2,825 straight pipes, 9 in. internal diameter, for the Durham County Water Board. Engineer, Bishop Auckland.

NOVEMBER 20.—**Hemsworth.**—LAUNDRY MACHINERY.—Supply to the B.G. of laundry machinery at the Poor Law Institution. Mr. W. T. Lynam, Engineer, Council Offices, Hemsworth. Deposit £1 1s.

NOVEMBER 20.—**Skipton.**—BRIDGE.—Reconstruction in reinforced concrete of Knowles House Bridge (length 36 ft., span 9 ft.), situate on the Keighley and Kendal main road at Skipton, for the West Riding C.C. West Riding Surveyor, County Hall, Wakefield. Deposit £1.

NOVEMBER 21.—**Brighton.**—BOILERS, &c.—Supply to the B.G. of two Cornish boilers, each 18 ft. long by 6 ft. dia., with working pressure of 150 lb., with builder's and engineer's work necessary to the alteration of the boiler house. Mr. E. Wallis Long, Architect, 56, East-street, Brighton. Deposit £3.

NOVEMBER 21.—**Dublin.**—SLUDGE-RAISING MACHINERY.—Designs and tenders for duplicate electrically-driven units to raise about 78,000 gallons per hour of sludge through a lift of 34 ft., for the T.C. Mr. J. S. Alford, 11, Victoria-street, Westminster, S.W.1. Deposit £2 2s.

NOVEMBER 22.—**Sheffield.**—TRAMWAY MATERIALS.—Supply to the Tramways Department of tramway points, crossings, fishplates, sole plates, fish bolts, tiebars, and copper bonds. Mr. A. R. Fearnley, General Manager, Sheffield.

NOVEMBER 24.—**Minehead.**—RESERVOIR.—Construction of a covered-in reinforced concrete reservoir, on any approved system of reinforcement, and having a capacity of one million gallons, for the U.D.C. Mr. A. Douglas Barron, Surveyor, Council Offices, Minehead, Somerset. Deposit £2 2s.

NOVEMBER 25.—**Birmingham.**—GASHOLDER TANKS.—Construction of two concrete gasholder tanks, 254 ft. diameter by 45 ft. deep, at the site of the new Gas Works, Washwood Heath, for the T.C. Engineer-in-Chief, Gas Works, Saltley. Deposit £5.

NOVEMBER 25.—**Edinburgh.**—WEIGHBRIDGE.—Supply and erection of 30-ton weighbridge at Baltic-street, Leith, for the T.C. Mr. J. A. Williamson, City Architect, Edinburgh.

NOVEMBER 27.—**London.**—PUMPING PLANT.—Supply of five sets of vertical enclosed steam engines, direct coupled to centrifugal pumps, and two independent condensing sets, for Abbey Mills pumping station, for the L.C.C. Chief Engineer, Old County Hall, Spring-gardens, Charing Cross, S.W.1. Deposit £5.

NOVEMBER 28.—**New Zealand.**—CRANE.—Supply to the Auckland Harbour Board, New Zealand, of one 1-ton fixed pedestal crane, for King's Wharf. Messrs. W. and A. McArthur, Ltd., 18-19, Silk-street, Cripplegate, E.C.2. Deposit £1 1s.

NOVEMBER 28.—**New Zealand.**—PLATE GIRDERS.—Supply of plate girders to the Public Works Department, for the Orepuki-Waiaun Railway. Department of Overseas Trade, 35, Old Queen-street, S.W.

NOVEMBER 30.—**Camberwell.**—LAUNDRY PLANT.—One new vertical steam boiler, one new horizontal steam calorifier, one new horizontal steam engine, new laundry machinery, &c., in connection with the re-arrangement of the boiler house and service laundry at the Public Baths, East Dulwich-road, for the B.C. Mr. Frederick J. Slater, Borough Engineer, Town Hall, Camberwell, S.E.5.

DECEMBER 5.—**Edinburgh.**—TRAMWAY MATERIALS.—Supply of car top covers and steel tramway rails, to the Tramways Department. Tramways Manager, 2, St. James'-square, Edinburgh.

DECEMBER 5.—**New Zealand.**—TELEPHONES.—For telephone system for the Mangahoo Power House. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 12.—**New Zealand.**—PLATE GIRDERS.—Supply to the Public Works Department of plate girders, for the Lawrence-Roxburgh and the Tuapeka Railways. Department of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 18.—**Victoria.**—COAL HANDLING PLANT.—For coal handling plant for the Morwell Power scheme, for the Victorian State Electricity Commission. Agent-General for Victoria, Melbourne-place, Strand, W.C.2. Deposit £2 2s.

DECEMBER 20.—**Australia.**—BORING MACHINE.—Supply to the Victorian Government Railways Commissioners of horizontal boring machine. Department of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 31.—**Argentine.**—RAILWAY.—Construction and equipment of 650 and 185 kilometres of one metre gauge railway as well as for the financing of the same, for the State Railways of the Province of Buenos Aires (Argentine Republic). Argentine Legation, Aldford House, 26, Park-lane, W.1.

JANUARY 6.—**Glasgow.**—BRIDGE.—Construction of ferro-concrete bridge over the Clyde at Oswald-street. Office of Public Works, 64, Cochrane-street, Glasgow.

JANUARY 31.—**Australia.**—ELECTRICAL PLANT.—Supply of steam turbine and other plant to the Morwell Power Station, for the State Electricity Commission. Agent-General for Victoria, Melbourne-place, Strand, W.C. Deposit £2 2s.

FEBRUARY 1.—**Auckland.**—ELECTRIC CRANES.—For the supply of twelve five-ton (alternatively three-ton) semi-portal balanced jib electric quay cranes, four five-ton (alternatively three-ton) balanced jib electric roof cranes, and six one-ton electric monorail cranes, for Auckland Harbour Board. Messrs. W. & A. McArthur, Ltd., 18-19, Silk-street, Cripplegate, London, E.C. 2. Deposit £2 2s.

NO DATE.—**Wrexham.**—ELECTRICAL INSTALLATION.—For electric lighting installation in 22 houses, for the T.C. Mr. G. D. Coe, Borough Electrical Engineer, Wrexham.

ROAD, SANITARY, AND WATER WORKS

NOVEMBER 13.—**Barnes.**—DRAINAGE.—Execution of works of subsoil drainage, &c., at Palewell Common, for the U.D.C. Mr. G. Bruce Tomes, Surveyor, Council House, High-street, Mortlake, S.W.14.

NOVEMBER 13.—**Barnes.**—LAY-OUT.—Clearing and levelling, turfing and planting with shrubs, and enclosing with concrete posts, dwarf wall and chains, the site of the old stone depot in Lonsdale-road, for the U.D.C. Mr. G. Bruce Tomes, Surveyor, Council House, High-street, Mortlake, S.W.

NOVEMBER 13.—**Barnes.**—ROADS.—Making-up of passage at rear of Upper Richmond-road, Mortlake, S.W., for the U.D.C. Mr. G. Bruce Tomes, Surveyor, Council House, High-street, Mortlake, S.W.

NOVEMBER 13.—**Bridge-of-Allan.**—EMBANKMENT.—For raising the embankment of Coxburn Reservoir, for the T.C. Messrs. J. & A. Leslie & Reid, 72A, George-street, Edinburgh. Deposit £1.

NOVEMBER 13.—**Felling.**—ROADS.—Construction of new road, for the U.D.C. Surveyor, Council Offices, Felling. Deposit £1.

NOVEMBER 13.—**Glasgow.**—ROADS, &c.—Construction of roads and sewers in connection with the Hawthorn-street housing scheme, for the T.C. Director of Housing, Town Hall, Govan.

NOVEMBER 13.—**Hammersmith.**—ROADS.—Re-paving of Fulham Palace-road, Queen-street, Scrubbs-lane, and Brook Green-road, for the B.C. Mr. R. Hampton Clucas, Borough Engineer, Town Hall, Hammersmith, W.6.

NOVEMBER 13.—**Harrow-on-the-Hill.**—SEWER.—Laying 174 lineal yds. of 15 in. surface water sewer at Bessborough-road, for the U.D.C. Mr. J. I. Bennett, Surveyor, Harrow.

NOVEMBER 13.—**Wakefield.**—SEWAGE WORKS.—Construction of a bio-aeration plant, in connection with the remodelling of the Sewage Disposal Works at Agbrigg, for the T.C. City Surveyor, Town Hall, Wakefield. Deposit £5.

NOVEMBER 14.—**Lambeth and Wandsworth.**—SEWER.—Construction in tunnel of a 7 ft. internal diameter sewer in brick or iron, of a total length of about 1 mile, in the Metropolitan Boroughs of Lambeth and Wandsworth, for the Administrative County of London. Chief Engineer of the Council, Old County Hall, Spring Gardens, S.W.1. Deposit £5.

NOVEMBER 14.—**Maldon.**—WATER MAINS.—Supply of about 1,227 yds. of 3 in. and 440 yds. of 2 in. cast-iron pipes, and laying same, for the R.D.C. Mr. Wm. Almond, Surveyor, 6, Market-hill, Maldon, Essex.

NOVEMBER 14.—**Salford.**—ROADS.—Paving of eight streets with stone setts, five streets with rock asphalte, and one street with tar macadam, for the T.C. Borough Engineer, Town Hall, Salford.

NOVEMBER 14.—**Salford.**—SEWER.—Reconstruction of sewers in Whit-lane, for the T.C. Borough Engineer, Town Hall, Salford.

NOVEMBER 15.—**Birmingham.**—PAVING.—Supply and laying 10,000 super. yds. of creosoted deal paving, for the T.C. Mr. H. H. Humphries, City Engineer, Council House, Birmingham. Deposit £2.

NOVEMBER 15.—**Birmingham.**—ROADS.—Construction of Mona-road, Erdington (82 yds. in length), for the T.C. Mr. Herbert H. Humphries, City Engineer, Council House, Birmingham. Deposit £2.

NOVEMBER 15.—**Blackpool.**—ROADS.—Making-up certain streets, for the T.C. Borough Engineer, Blackpool. Deposit £1.

NOVEMBER 15.—**Glasgow.**—GOLF COURSE ALTERATIONS.—Alterations and extension of Cowglen Golf Course, Pollokshaws, Glasgow. Mr. T. Henry Boyle, Secretary, 160, Bath-street, Glasgow.

NOVEMBER 15.—**Haddington.**—WATER MAINS.—For the supply and laying of about 2½ miles of 4 in. cast-iron water mains from Gladsmuir to Gateside, for the East Lothian C.C. Mr. J. Ross, Water Superintendent, Hopetou-terrace, Gullane.

NOVEMBER 15.—**Leeds.**—ROADS.—Making up St. Michael's-lane and Queen-square, for the T.C. Highways and Permanent Way Department, 1, Swinegate, Leeds. Deposit £1 1s.

NOVEMBER 15.—**Maidstone.**—SEWERAGE SCHEME.—Construction of Barming Heath Sewerage Scheme, for the R.D.C. Mr. Thos. A. Busbridge, Surveyor, Council Offices, King-street, Maidstone. Deposit £1 1s.

NOVEMBER 15.—**Rochester, Kent.**—SANITARY WORK.—Provision of additional sanitary accommodation at the Grammar School for Girls, Rochester, for the Kent Education Committee. Mr. W. H. Robinson, F.S.Arc., Sessions House, Maidstone. Deposit £1.

NOVEMBER 15.—**Wath-upon-Dearne.**—ASPHALTING.—Repairs to asphalte playground at Wath-upon-Dearne Victoria Council School. Education Department, County Hall, Wakefield.

NOVEMBER 18.—**Bootle.**—ROADS.—Widening and reconstruction of the carriageway and footways of Hawthorne-road, Orrell, for the T.C. Borough Engineer, Town Hall, Bootle. Deposit £1 1s.

NOVEMBER 18.—**Mossend.**—EXCAVATING.—Excavating and disposing of about 200,000 cubic yards of material from ground adjoining Clydesdale Steel Works, for Messrs. Stewarts & Lloyds. Clydesdale Works, Mossend.

NOVEMBER 18.—**St. Helens.**—SEWER.—Construction and laying of a surface-water sewer in Fleet-lane, for the T.C. Mr. Arthur W. Bradley, Borough Engineer, Town Hall, St. Helens. Deposit, £2.

NOVEMBER 20.—**Brynmawr.**—LAYING OF WATER PIPES.—For supply and laying of approximately 375 yds. of 4 in. diameter and 270 yds. of 3 in. diameter cast-iron water pipes, for the U.D.C., at the Housing Scheme site. Mr. J. J. Quirk, Surveyor, Council Offices, Brynmawr.

NOVEMBER 24.—**Reading.**—SEWAGE DISPOSAL WORKS.—Construction of activated sludge treatment works, for the T.C. Mr. G. Midgley Taylor, 36, Victoria-street, Westminster, S.W.1. Deposit £5.

NOVEMBER 30.—**Skegness.**—DRAINAGE.—For surface-water drainage works in (1) St. Andrew's-drive, (2) Muirfield-drive, for the U.D.C. Mr. R. H. Jenkins, Surveyor, Council Offices, Skegness.

NOVEMBER.—**Portslade-by-Sea.**—ROADS.—Making-up various roads, for the U.D.C. Mr. A. Taylor Allen, Council Offices, Portslade-by-Sea. Deposit £1 1s.

DECEMBER 9.—**Basford.**—SEWERS.—For laying about 800 yards of 9 in. stoneware sewers, &c. Mr. S. Maylan, Surveyor, Public Offices, Basford. Deposit £2 2s.

JANUARY 8.—**Argentine.**—SEWERAGE SYSTEM.—Construction of a sewerage system at Mendoza, for the Department of Sanitary Works, Argentine. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

Competitions.

DECEMBER 1.—**Ryde, I.W.**—PAVILION.—The T.C. invite designs for a pavilion to be erected in the Eastern Esplanade Gardens, Ryde. Premiums, £50 (or £300 to carry out the work), £30, £20. Mr. B. F. Holmes, M.Inst.M.&Cy.E., Borough Surveyor. Ryde.

(*See Competition News, page* 690.)

Auction Sales, Tenders, etc.

✱NOVEMBER 20.—**Langport, Somerset.**—Messrs. H. L. Hunt & Son will sell, *re* Henry Pittard & Son, at Langport, Somerset, builders' and contractors' plant, machinery, stock-in-trade, &c., valuable woodworking machinery, equipment of motor engineering. Auctioneers, Langport, Somerset.

✱NOVEMBER 27.—**Southall.**—Messrs. Geo. Head & Co. will sell, by the direction of the Disposal Board (in large and small lots), at Inspection Division Royal Engineers' Stores (I.D.R.E.S.), Scott's-road, Southall, electrical material and fittings, lamps, cable, copper wire, &c. Auctioneers, 40, Baker-street, Portman-square, London, W.1.

✱NOVEMBER 28 & 30, AND DEC. 1.—**Hereford.**—Messrs. Bruton, Knowles & Co. will sell, by direction of the Disposal Board, building material, office furniture and equipment, &c., at No. 14 National Filling Factory. Auctioneers, Albion Chambers, Gloucester.

✱NO DATE.—**Chepstow.**—Freehold building site of about 17 acres—part of the Roggiett Housing Scheme, now abandoned—for sale by tender. Messrs. Evans & Evill, solicitors, Bank Buildings, Chepstow.

Public Appointments.

NOVEMBER 13.—**Carnarvonshire.**—Clerk of Works required by the Carnarvonshire County Council to superintend the reconstruction of a bridge in ferro-concrete on the Hennebique system. Mr. D. R. Parry, County Surveyor, County Offices, Carnarvon.

NOVEMBER 21.—**Tottenham, N.15.**—Quantity Surveyors invited to submit their scales of charges for the preparation of quantities for the varied building works, &c., undertaken from time to time by the Council. Mr. Reginald C. Graves, Clerk to the Council, Town Hall, Tottenham, N.15, endorsed "Quantity Surveyor."

NOVEMBER 22.—**Sheffield.**—Lecturer in Architecture, salary £500 per annum, at the University of Sheffield. Mr. W. M. Gibbons, Registrar.

✱NOVEMBER 29.—**London, S.W.2.**—DEPOT MANAGER.—Depot manager required by the Lambeth Borough Council; one who has had recent experience in a similar capacity under a Local Government Authority, or has held the position of general foreman in the building trade. Mr. Bruce Penny, Town Clerk, Lambeth Town Hall, Brixton-hill, S.W.2.

NEW BUILDINGS IN SCOTLAND.

PORTSOY.—Tenders are invited for mason work, carpenter and joiner, slater, plasterer, plumber and painter work, in connection with the proposed extension of Portsoy Public School for the County of Banff Education Authority. Plans can be seen at the office of Mr. J. Wood, A.R.I.B.A., architect, Education Office, East Church-street, Buckie. Schedules of quantities can be obtained on application to the architect, with whom tenders are to be lodged, by November 6.

ABERDEEN.—The Streets and Roads Sub-committee is considering a proposal to extend the motor garage at the police workshops and installing a modern weighbridge.——The Corporation Plans and Sewerage Committee has passed plans for new property valued at £4,000, including two self-contained houses at Mannofield, new garages and business premises, and an oil tank for Messrs. Miller & Co.——The Town Council Finance Committee had under discussion recently the question of the removal of the properties in Blackfriars-street to make room for the erection of the City War Memorial, and agreed to recommend the Town Council to proceed with the erection of three six-tenement blocks to accommodate tenants displaced in Blackfriars-street. The site recommended is the property of the Council in Park-road.

COATBRIDGE.—The Dean of Guild Court has granted permission to Mr. H. Goldie to erect a double villa in Drumpellier-street, and to Mr. W. Pettigrew to build a cottage in Drumpellier-street.

BERWICK.—The Town Council has decided to proceed with a scheme for the reconstruction of the slum areas in the borough. One-fourth of the houses have been condemned as unfit for habitation. The Ministry of Health has agreed.

NAIRN.—The Town Council has decided that the Provost should visit Edinburgh with a view to getting the Board of Health to sanction the erection of the new houses on the site originally chosen.

DUNDEE.—The Town Council invites tenders for reinforced concrete and other works required in the erection of a public market. Particulars can be obtained from the architect, Mr. James Thomson, 91, Commercial-street, Dundee. Tenders are to be lodged with the Town Clerk, City Chambers, Dundee, not later than November 20.

PERTH.—In connection with the alterations to the Mansion House of Murie, Errol, and the erection of pavilion and other buildings on the grounds thereof, tenders for the following works are desired: (1) Excavator, mason and brick-work; (2) carpenter and joiner; (3) steel; (4) plumber; (5) plaster; (6) slater; and (7) glazier. Drawings, conditions of contract, and schedules of quantities from the architects, Messrs. G. P. R. Young & Son, 42, Tay-street, Perth, on payment of £2 for the excavation, mason and brickwork, carpenter and joiner, and plumber schedules; and £1 for each of the other schedules. Tenders to be lodged with Mr. T. B. Marshall, Clerk to the Board, County Buildings, Perth, not later than November 14.

COWDENBEATH.—The Town Council invites offers for the following works in connection with the erection of sixteen houses in Stenhouse-street: (1) Excavator and brickwork; (2) carpenter and joiner; (3) glazier; (4) slater and roughcast; (5) plumber and gas fitter; (6) plaster and cement. Specifications and schedules of quantities can be obtained from Mr. C. A. Alexander, Burgh Surveyor, Town House, Cowdenbeath, on deposit of £2 2s. Plans may be seen at the Burgh Surveyor's Office, or at the architects', Messrs. Muirhead and Rutherford, East Port, Dunfermline. Tenders to be lodged with Mr. R. T. Milne, Town Clerk, Town House, Cowdenbeath, not later than November 14.

GLASGOW.—The Corporation has the question of the provision of a new lairage for 10,000 cattle under consideration. The proposed site is at Mountblow, and immediately west of Dalmuir Sewage Works. This land is at present owned by the Corporation Sewage Department, and there are about 150 acres available.——The Dean of Guild Court has passed plans for 102 tenement dwelling-houses of two and three apartments which the Corporation is to build in Wolseley-street and Logan-street, Oatlands.——The Corporation has invited designs and offers for the construction of a ferro-concrete bridge over the Clyde at Oswald-street.——Specifications and forms of tender for the construction of roads and sewers in connection with the Hawthorn-street Housing Scheme, for the Corporation, may be had on application to Sir John Lindsay, Town Clerk, City Chambers, Glasgow; and the plans can be seen at the Director of Housing's office, Town Hall, Govan. Tenders must be lodged with the Town Clerk by November 13.——Messrs. Stewarts & Lloyds, Ltd., are prepared to receive tenders for excavating and disposing of about 200,000 cu. yds. of material from ground adjoining their Clydesdale Steel Works, Mossend. Offers are to be lodged not later than November 18. The site may be viewed and drawings and particulars of borings may be examined on application to the above works.

Municipal Elections.

Councillor Edward Davies, builder, has been elected Mayor of Newport.

Messrs. David Jones, D. Bartlett and T. Long, builders, have been elected to the Carmarthen Town Council.

New Argyllshire Road.

A new road, which has been constructed to connect Kinlochleven with the rest of Argyllshire, has just been completed and opened for public traffic. Mr. Kenneth Macrae, surveyor of the Lorn District Committee, was the engineer, and the work was carried out by the Ministry of Transport.

Obituary.

The death has taken place at his home, 61, Marlborough-street, Seaham Harbour, of Mr. John Nicholson, at the age of 77 years. He carried on business as a builder and contractor for many years.

The death has also occurred at his residence in Sunderland-road, Durham, of Mr. Dixon Elliott, junr., aged 48 years, who had carried on his father's business as a builder and contractor.

Cardiff Technical College.

Ten scholarships, tenable in the various Departments of the Technical College, covering tuition fees and maintenance grants of £40 per annum for three years are offered for competition each year by the City of Cardiff Technical Instruction Committee to residents and non-residents of Cardiff. At the Scholarship Examination recently held, Mr. Alfred C. Light, of Hanley, Stoke-on-Trent, obtained one of the Scholarships tenable in the Department of Architecture and Civic Design.

New Type of Wood Flooring.

In order to meet the demand for a first-class flooring, combining an attractive appearance with strength and ease of handling, the Patent Oak Flooring Co., of Wellhead-lane, Perry Barr, Birmingham, are putting on the market a new type of wood floor tile, the "Tenax." These tiles, which measure 9 in. by 9 in. by 1½ in. thick, are made in well-figured oak and polished. Any tendency to warp is prevented by making each tile in sections glued together, and to ensure rigidity each tile is reinforced with three steel rods crosswise of the grain in the centre of its thickness. In the process of manufacture the tiles are subjected to hydraulic pressure to close the grain and reduce the possibility of shrinkage; also, they are treated with a waterproofing compound which has, we are informed, shown in a test that the tiles absorb no moisture after soaking in water for twenty-four hours. The bottoms of the tiles are chequered to give a key for fixing to a mastic base.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

BATH.—The T.C. is approaching the Ministry of Health in regard to the erection of an additional fifty houses.

BEDDINGTON.—Plans passed by the U.D.C.: Two lock-up shops, Elgin-road, for Mr. Arthur Salmon; two houses, Plough-lane, for Mr. P. Crowley; two bungalows, Link-lane, for Mr. E. M. Swaby; six houses, Link-lane, for Mr. C. Lewin; house, Woodcote-road, for Mr. C. A. Saville; house, Plough-lane, for Mr. J. J. Shell; bungalow, Plough-lane, for Mr. J. Liddle; two houses, Senga-road, for Messrs. G. & C. Langley; house, Woodcote-road, for Mr. S. J. Hollands; house, Plough-lane, for Mr. G. Fulton.

BEDWELLTY.—It was reported at the last Council meeting that the Housing Commissioner had sanctioned the erection of twelve houses at Twynffold. Notice of motion was given of a resolution calling upon the Council to provide a recreation ground at Aberbargoed.

BERWICK.—The T.C. has decided to proceed with a scheme for reconstructing slum areas in the borough, a fourth of the houses having been condemned as unfit for habitation. The Ministry of Health have agreed to provide £300 per annum towards the scheme providing the deficiency between the cost and the amount received in rates amounts to twice that amount, the remaining £300 to be provided from the rates.

BINGLEY.—Plans passed by U.D.C.: Garage, Beck House, Micklethwaite, for Mr. J. H. Wright; office, Crook-lane, Wilsden, for Mr. E. Wynn; garage, Granville-terrace, for Mr. G. R. Fox; four bungalows, Cottingley Moor, for Mr. W. Broadbent; boiler-house, York-street, for Mr. James Whitwham; store shed, Albert Mills, Bingley, for A. R. Wright & Sons, Ltd.

BOURNEMOUTH.—The Ministry of Health has conducted an inquiry into the application of the T.C. to expend £160,000 on the erection of a pavilion on the front.

BRECONSHIRE.—At a meeting of the Brecon Council it was stated that the work of extending the Infirmary, as a war memorial, had been definitely decided upon for next spring when building operations would commence.

BRIDGEND.—The Council has approved plans for alterations to the Bridgend Conservative Club.

BUILTH WELLS.—The Council has granted permission to Messrs. Atkins & Powell, electrical engineers, to canvass the area in connection with a lighting scheme, estimated to cost £3,500 of which they are the projectors.

CARMARTHEN.—The T.C. has under consideration the purchase of a new fire engine.——The R.D.C. has appointed a committee to inspect and report on the Gellywen Bridge, which is to be reconstructed.——An arbitration is taking place between the County Education Committee and the owners of Cwmmawr House and lands at Drefach, which is to be converted into an intermediate school, on the question of purchase price.——The R.D.C. is to undertake the widening of Cwmyglo-road.

COLWYN BAY.—A Ministry of Health inquiry has been held into the application of the U.D.C. to borrow £41,000 for the improvement of the gasworks.

CRANBROOK.—Plan passed by R.D.C.: House, The Common, for Mr. A. Brace.

FALKIRK.—The T.C. has decided to proceed at once with an extensive scheme of town improvement with a view to providing work for the unemployed in the district. The scheme as drawn up will involve a total expenditure of £20,000.

GELLYGAER.—The Council has decided to call for fresh tenders in respect to forty houses to be erected at Bargoed. This is at the instance of the Ministry of Health.

GILLINGHAM.—Plans passed by the T.C.: Shop, Canterbury-street, Mr. J. V. Garvey; three houses, First Avenue, Mr. H. R. Sandy; offices, King-street, Gillingham Co-operative Society; bungalow, Livingstone-road, Mr. H. R. Sandy; bacon factory, Springvale, Wigmore, by London, MacQueen and Douglas, for J. W. Cottrell and G. Carrington; bungalow, Nelson-road, by Mr. D. H. Drury, for Mr. R. Richardson.

HAVERFORDWEST.—The Town Council has instructed the Surveyor to obtain tenders for the supply, per cubic yard, of limestone and granite.——The Ministry of Transport has notified the Council that it will bear 50 per cent. of the cost of the Merlin Bridge improvement, including elimination of approach corner. In view of this, a compulsory order of land acquisition is to be sought.

HULL.—Plans passed by T.C.: W. Jessop (Mrs.), house, Beverley-road; W. Reed, house, Newland Park; J. E. Wray, house, Cottingham-road; F. Plummer, S. Webster and G. Cullington, new premises, King Edward-and Story-streets; Jackson's, Ltd., alterations, Waterworks-street; A. Evans, additions, Cottingham-road; E. Beddoes, garage, &c., "Burnside," Newland Park; H. W. Jackson, garage, 68, Westbourne-avenue; Chamber & Fargus, Ltd., oil house, Wincolmlee; Barton's Seed Crushing Mills, Ltd., coal chamber alterations, King's Mill, Stoneferry; Reckitt & Sons, Ltd., ladies' lavatories, Dansom-lane; J. Wood & Sons, Ltd., saw mill, Hyperion-street; F. Hare, additions, 37, Chariot-street; W. H. Taylor & Son, alterations, 42, George-street; Reckitt & Sons, Ltd., coal yard drainage, Chapman-street; B. Barnaby, additions, Neptune-street; J. E. Wray, garages, Cottingham-road; C. A. Hill, additions, Newland Park; J. Conell, garage, 299, Anlaby-road; Hull Brewery Co., Ltd., additions, "Wheatsheaf Hotel," Prospect-street.——The Works Committee of the T.C. has decided that an application should be made to the Unemployment Grants Committee for assistance in the construction of the proposed new road to Paull, east of the King George Dock, where great developments are in progress by the railway company. It is estimated that the cost will be approximately £14,000 for the Hedon-road and £26,000 for the Paull-road.

HYTHE.—Plans passed by T.C.: Nine cottages in St. Nicholas-road and facing the Green, for Mr. P. Hoskins; house on Barrack-hill, for Mr. J. W. Stedman.

KIDDERMINSTER.—Plans passed by R.D.C.: Rectory at Broome, for the Rev. J. H. Seeley; two bungalows at Chaddesley Corbett, for Messrs. Prestidge; three bungalows at riverside, Wribbenhall, for Mr. M. Round.

LAMPETER.—The Council has decided, in view of amended estimates, to apply for sanction to increase the suggested loan to £2,300 for the Mart extension scheme.

LEYTON.—Plans passed by the U.D.C.: E. A. Matthews, semi-detached house, 214, Vicarage-road; Alexander & Sons, Ltd., additional story, 301, High-road, Leyton; Shenstone & Co., Ltd., staining shop, Shaftesbury-road; S. A. S. Yeo, additions, 323 and 323A, Lea Bridge-road; E. M. Hall, garage, 43, Union-road; Chas. Living, junr., additions, 517, High-road, Leytonstone.

LLANELLY.—In reply to the request for sanction to erect twenty houses under the assisted scheme made by the Llanelly Council, the Ministry of Health has replied, refusing the permit, but suggesting that the time had come when the Council should build houses on its own responsibility. If the Llanelly Council would build forty houses on its own account, the Ministry would sanction the erection of twenty houses under the State assisted scheme. The Council decided to accept the offer, providing tenants could be secured for the forty houses to be built on the Council's own initiative.

LONDON.—The Metropolitan Water Board proposes to expend £12,000 in the extension of the meter-testing and fitting shop at New River Head.

LOWESTOFT.—The Borough Surveyor has been instructed to prepare plans and estimate for a new sea wall to be erected on the North Beach inside the present wall.

MAESTEG.—A sub-committee of the U.D.C. has been appointed to consider the Ministry of Transport modification of the electricity scheme.

MERTHYR TYDFIL.—The Ministry of Transport has decided to make grants as follows for road works to be undertaken by the B.C.: Construction of road at Quaker's Yard, £7,150 (estimated cost, £14,300); Blackrock, construction of road, £2,900 (estimate, £5,800); and £24,800 of the estimated cost of £49,000 for improvements to Cardiff-Merthyr-road and Merthyr-Rhymney roads.

MITCHAM.—The U.D.C. has agreed to Messrs. Eastman Bros. proceeding with the erection of twenty-four houses in Ipswich-road, provided that the number of houses to the acre does not exceed sixteen.

MYNYDDISLWYN.—The Council has instructed the Surveyor to submit plans to the G.W.R. of the projected widening of bridge at Pontllanfraith, and to notify them it was a work the Council intend to carry out. The question of the joint provision of a cemetery with the Bedwas Council is under discussion. The Council has decided to make the following roads, in the order named: Ynysddu, Gellyhaf, and Blackwood.

NARBETH.—The Ministry of Health has written asking the Council to come to a definite decision anent the Saundersfoot sewerage scheme.

NEATH.—The Town Council has asked for a report with the view to purchase of a new fire engine for the area.——The acquisition of the Neath Harbour Commissioners' property is under consideration by the G.W.R. Co., who, it is reported, contemplate constructing docking facilities along the river banks at the outlet at Briton Ferry.

NEWBURY.—Plans passed by R.D.C.: Factory at Thatcham for Cropper & Co.; alterations at The Grange, Thatcham, for the Rev. J. F. Hoyle; store and workshop at Thatcham, for the Thatcham Road Transport; house, Bath-road, Thatcham, for Mr. A. Hall.

NEWPORT (ISLE OF WIGHT).—Plan passed by T.C.: Bungalow, Medina-avenue, by Mr. G. F. Quinton, for Mr. D. R. Smith.

NEW QUAY.—The Memorial Hall Committee has acquired a field and has decided that an architect be asked to supply plans for laying out a bowling green and plans and estimates for the erection of a hall.

NEWTON ABBOT.—Plans passed by U.D.C.: House at Moreton, for Mr. E. Cosier; two bungalows at Kingskerswell, for Mr. A. Halls; bungalow at Dawlish Warren, for Mr. W. H. Cook; rebuilding 55, Old Exeter-street, Chudleigh, for Mr. W. F. Pearce; bungalow at Higher Rydon, Ogwell, for Mr. R. G. Bladon; bungalow at Higher Gabwell, Stoke, for Mr. G. Bradford; bungalow at Lustleigh, for Mr. V. J. May, and motor garage at Coombe Cross, Bovey Tracey.

PEMBROKE.—The T.C. has acquired Hobbs' Point Pier, and a report is to be submitted on the improvement and plant necessary to make the proposition a sound municipal concern.——The R.D.C. has asked the Surveyor to report, with cost estimates, on the work requiring to be done at Hazelbeach Bridge.

PEMBROKE DOCK.—The Pater Ward Committee has decided to open negotiations with the Admiralty for foreshore facilities in the creek necessary to construct a public swimming bath.

PENYBONT.—The R.D.C. received a deputation from the Ogmore and Garw Council suggesting a joint erection of a new bridge at Abergarw, at an estimated cost of £3,000. On being informed that the Ministry of Transport was prepared to make a grant if an immediate joint scheme was decided upon, the Council agreed to share cost with the Ogmore Council. Plans have been called for.

PONTARDAWE.—The Council has appointed a committee to go into the matter of provision and laying out of a new cemetery for Ystalyfera.

SHEFFIELD.—Plans passed by T.C.: New street, off Storth-lane, for Trustees of H. H. Andrews; bungalow, Cobnar-road, for Mr. A. E. Ward; house and shop, Ecclesall-road, for Messrs. West & Co.; house and garage, Canterbury-avenue, for Mr. F. C. Wright; bungalow, Richmond-road, for Mr. C. Elderkin; house, Wellcarr-road, for Mr. G. Hindle; house and two garages, Ecclesall-road South, for Mr. W. Ramsay; two houses and garages, Ecclesall-road South, for Mr. T. Blacktin.

SKEGNESS.—The application of the U.D.C. to borrow £16,500 for improvement and extension of the town's sewage works has formed the subject of a public inquiry by Mr. W. M. Cross, of the Ministry of Health.

SOUTH AFRICA.—Information has been received by the Department of Overseas Trade relative to certain building schemes, including the construction of a block of flats of the best class, to be elaborately fitted for residential purposes; another block of flats of the town type; and a new bank. United Kingdom firms interested may secure information (*e.g.*, names of promoters, &c.) upon application to the Department of Overseas Trade (Room 42), 35, Old Queen-street, London, S.W. 1 (Reference, D.O.T. 9672/E.D./M.P.).

SOUTHEND-ON-SEA.—Plans passed by T.C.: Two houses, Leamington-road, for E. Wingrave; house, Underwood-square, for J. R. Marshall; sixteen houses, Lovelace-gardens, for W. T. Welbourn; two bungalows, Nelson-road, for E. A. Broughton; house, Kingswood-chase, for P. R. King; house, Westborough-road, for A. Held; workshop, West-road, for G. E. Wells; two houses, Central-avenue, for Simpson & Sons; house, Esplanade-gardens, for G. W. Eves; two bungalows, Fleming-avenue, for A. Lilley; additions, 61, Leighville-grove, for H. Ferguson; bungalow, Glenbervie-drive, for W. W. Jones; bungalow, Commercial-road, for Messrs. Carrington & Cool; offices and auction hall, Leigh-road, for S. R. Davis; two flats, Warrior-square, for H. Snell; garage, "Paglesham," Crowstone-road N., for T. Coulson; three houses, North-avenue, for H. Truss; house, Seymour-road, for E. M. J. Bowler; two houses, Westminster-drive, for J. Humphreys; additions, 19, Lydford-road, for R. Gilling; house, Armitage-road, for L. J. Mead; three houses, Lymington-avenue, for A. Butt; house and two flats, Maple-avenue, for E. H. Brewer; two bungalows and two garages, Acacia-drive, for F. W. Goldsworthy; bungalow, Branksome-road, for J. Willis; house and garage, Chalkwell-avenue, for Dr. C. F. Stovin; garage, Cliffsea-grove, for D. Wayland; Conversion of two houses into one, "Bude" and "Balmoral," Westcliff-parade, for Mrs. F. Spreng; garage, Fleetwood-avenue, for Mr. Smith.

SUTTON.—The U.D.C. is to expend £1,900 on a dust pulveriser, &c.

THORNTON.—Plans passed by U.D.C.: Bungalows, Lawson's-road, for Mr. Lancaster; two pairs of semi-detached bungalows in Fleetwood-road, for Mr. Lancaster; house, Clarence-avenue, for Mr. T. W. Platt; pair of bungalows in Alexandra-avenue, for Mr. A. Stansfield; two houses off Beach-road, and two bungalows in Rossall-road, for Holt & Dawson.

TOPHILL.—The County Surveyor has submitted to the Dorset E.C. a scheme for a school at Portland, Tophill, estimated to cost £13,025, which the Committee recommends shall be adopted.

WEST LANCASHIRE.—The R.D.C. has approved plans for the building of a pair of brick bungalows and a detached house in Hundred End-lane, Banks; a brick bungalow in Church-lane, Banks; and of certain alterations to the Primitive Methodist Church at Banks.

FIRES.

BO'NESS.—Damage estimated at several thousands of pounds was caused to the rear premises of the Clydesdale Hotel, Bo'ness, by a fire; adjoining workshop, garage, and front office of Messrs. George Anslie & Sons, motor engineers, were destroyed.

CAERPHILLY.—Much damage was caused by an outbreak in an outhouse at the rear of "Glavant," the residence of Mr. Joseph Howells, J.P.

GLASGOW.—The main building of Messrs. James Park & Co.'s bleaching works, at Carmyle, near Glasgow, has been destroyed by fire. The damage is estimated at £40,000.

LINCOLN.—A fire has occured at the "County Arms Hotel" premises.

LOUGHBOROUGH.—The hosiery factory of Messrs. Caldwell, Ltd., Churchgate, has been gutted by fire, together with several adjoining shops.

MERTHYR TYDFIL.—Penydaman House, in the occupation of Mr. and Mrs. F. T. James, was extensively damaged by fire outbreak on November 3.

NOTTINGHAM.—The shop of Mr. Alfred Ernest Kirton, who has a stationery and library business at 562, Mansfield-road, has been completely gutted by fire.

PONTARDAWE.—Between £2,000 and £3,000 worth of damage has been done by a fire at 4, Herbert-street, Pontardawe, a draper's shop in the occupation of Mr. Matt Harris.

TANYGARTH.—A fire has occurred at Tanygarth, in the Ceiriog Valley, the residence of Mrs. Bertram Brooke, the Ranee of Sarawak.

TONBRIDGE.—A fire has occurred at Penshurst Railway Station. The station buildings, including the booking office, were destroyed.

* See also our List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 17 0

Per 1000. Delivered at London Goods Station.

	£ s. d.		£ s. d.
Flettons, at King's Cross	3 1 0	Best Blue Pressed Staffs.	9 11 6
Do. grooved for plaster	3 3 0	Do. Bullnose	10 1 6
Do. Bullnose	3 16 0	Blue Wire Cuts	7 11 6
Best Stourbridge Fire bricks:—			
2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

*Best White, Ivory, and Salt Glazed Stretchers	22 0 6	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
		One Side and two Ends	31 10 0
Headers	21 10 0	Two Sides and one End	32 10 0
Quoins, Bullnose and 4½in. Flats	28 10 0	Splays and Squints	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	13 6	per yard,	delivered 2 miles radius Paddington.
Pit Sand	16 0	" "	
Thames Sand	16 6	" "	
Best Washed Sand	16 6	" "	
¾ in. Shingle for Ferro-Concrete	14 0	" "	
¾ in. " "	15 0	" "	
¾ in. Broken Brick	10 6	" "	
Pan Breeze	5 6	" "	

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification Test £3 3 0	£3 8 6	
50/- alongside at Vauxhall in 80-ton lots.		
Ferrocrete per ton extra on above	10 0	
Roman Cement	8 15 0	
Parian Cement	5 17 0	
Keene's Cement, White	5 17 0	
" " Pink	5 12 0	
Plaster, Coarse, Pink	3 10 0	
" " White	3 17 6	
" Fine	5 12 0	
Sirapite, Coarse	3 16 0	
" Finish	4 4 0	
Grey Stone Lime	2 16 6	
Chalk Lime	2 16 6	
Best Ground Blue Lias Lime	2 18 6	
Hair	17 0 0	
Granite Chippings	1 12 0	

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 1
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 4
Do. do. delivered on road wagons at Nine Elms Depot	3 5
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 7
Do. do. delivered on road wagons at above stations, per ft. cube	4 8
White bedded, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. average, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	s. d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 3
6 in. rubbed two sides, ditto "	5 9
3 in. sawn two sides slabs (random sizes) "	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 5½
1½ in. to 2 in. ditto, ditto "	1 3
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	5 8
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto, ditto "	2 5
2 in. self-faced random flags Per Yard Super	7 11

ARTIFICIAL STONE.

Delivered in London Area in full van loads.	s. d.	
Plain	8 6	per ft. cube.
Moulded	10 0	" "
Cills	11 0	" "

WOOD.

GOOD BUILDING DEAL.

Inches	per stan.	Inches	per stan.
4 × 11	£36 0	3 × 6	£22 10
4 × 9	36 0	3 × 11	32 10
4 × 8	28 0	2 × 11	32 10
4 × 7	26 0	3 × 9	30 0
3 × 8	28 0	2½ × 9	30 0
3 × 7	22 10	3 × 4½	20 10
2½ × 7	22 10	3 × 4	20 10

PLANED BOARDS.

1 × 11	40 0	1 × 9	35 0

PLAIN EDGE FLOORING.

Inches	per sq.	Inches	per sq.
¾	20/-	1¼	32/6
⅞	22/6	1½	40/-
1	25/-		

WOOD (*Continued*).

TONGUED AND GROOVED FLOORING. Inches	per sq.	MATCHINGS (BEST). Inches	per sq.
1	25/-	¾	17/6
1¼	32/6	⅞	22/-
1½	40/-	1	25/-

Inches	BATTENS.	s. d.
1 × 2		2 6 per 100 ft.

SAWN LATHS.

Per bundle				0 3 0	
Dry Wainscot Oak, per ft. super, as inch	0	2 6	to	0 3 6	
¼ in. do.	0	1 10½	to	0 2 6	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2 3	to	0 3 0	
Cuba Mahogany	0	3 6	to	0 4 0	
Teak (Rangoon, Moulmein or Java), per load	45	0 0	to	50 0 0	
American Whitewood planks, per ft. cube	0	16 0	to	0 18 0	
Best Scotch Glue, per cwt	6	15 0	to	—	
Liquid Glue, per cwt	4	7 0	to	5 10 0	

SLATES.

1st quality slates from Bangor or Portmadoc in truck loads delivered London area. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	41 17 0	18 by 10	23 12 6
22 by 12	38 0 6	18 by 9	20 16 3
22 by 11	35 2 0	16 by 10	19 16 0
20 by 12	33 8 3	16 by 8	15 8 3
20 by 10	28 11 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 0 0
Ditto hand-made ditto	6 10 0
Ornamental ditto	6 15 0
Hip and valley tiles (per dozen) Hand made	0 8 6
Machine made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	13 0 0
Plain Compound Girders	15 0 0
" Stanchions	17 0 0
In Roof Work	20 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works. 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes. (all sizes).	Fittings. Up to 2".	Fittings. Over 2".	Flanges. Up to 2".	Flanges. Over 2"
Gas	55 %	50 %	55 %	60 %	65 %
Water	50 %	45 %	50 %	55 %	60 %
Steam	45 %	40 %	45 %	50 %	55 %
Galv'd—					
Gas	40 %	42½ %	47½ %	52½ %	57½ %
Water	37½ %	37½ %	42½ %	47½ %	52½ %
Steam	27½ %	32½ %	37½ %	42½ %	47½ %

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 2½	2 5	2 11
2½ in. "	3 9½	2 8	3 8
3 in. "	4 5½	2 11	4 4
3½ in. "	4 10½	3 8	5 1
4 in. "	5 5	4 1	5 10

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	1 10½	1 4½	1 10½
2½ in. " "	2 1	1 7½	2 3
3 in. " "	2 6	2 0	3 0
3½ in. " "	2 11	2 4½	3 6
4 in. " "	3 5	2 10½	4 3

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 5/3. .. 5 in., 6/9. .. 6 in., 8/-.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	12 10 0	to	13 10 0
Staffordshire Crown Bars—good merchant quality	13 10 0	..	14 10 0
Staffordshire "Marked Bars"	16 0 0	..	17 0 0
Mild Steel Bars	12 0 0	..	13 0 0
Steel Bars, Ferro-Concrete quality, basis price	12 0 0	..	13 0 0
Hoop Iron, basis price	15 0 0	..	16 0 0
" Galvanised	29 0 0	..	31 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	14 0 0	..	15 0 0
" " " 24 g.	15 0 0	..	16 0 0
" " " 26 g.	16 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	20 0 0	..	21 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	21 0 0	..	22 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	23 0 0	..	25 0 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9ft. 20 g.	19 0 0	..	20 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	19 10 0	..	20 10 0
Ordinary sizes, 6ft. to 9ft. 26 g.	21 10 0	..	22 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	23 0 0	..	25 0 0
Best Soft Steel Sheets, 26 g.	24 10 0	..	25 10 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	21 10 0	..	23 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	35 10 0	—	—
Pipe in coils	36 0 0	..	—
Soil Pipe	38 10 0	..	—
Compo pipe	39 10 0	..	—
Old lead, ex London area, at Mills per ton	23 10 0	..	—
Do., ex country, carriage forward per ton	24 10 0	—	—
COPPER—			
Strong Sheet per lb	0 2 3	—	—
Thin "	0 2 4	..	—
Copper nails	0 2 3	..	—
Copper wire	0 2 4	—	—
TIN—English Ingots "	0 1 11	..	—
SOLDER—Plumbers' "	0 0 11	..	—
Tinmen's "	0 1 1	..	—
Blowpipe "	0 1 4	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	2¾d.	32 oz. fourths	8½d.
" thirds	4½d.	" thirds	10d.
21 " fourths	4½d.	Obscured Sheet, 15 oz. 21	7½d. 5½d.
" thirds	6d.		
26 " fourths	5½d.	Fluted 15 oz. 7½d. 21 oz.	9½d.
" thirds	7½d.	Enamel 15 " 5½d. 21 "	7d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
½ Rough rolled	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	6d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes per gallon	0 3 9
" " "	in barrels "	0 3 11
" " "	in drums "	0 4 2
Boiled " "	in barrels "	0 4 3
" " "	in drums "	0 4 5
Turpentine	in barrels "	0 10 5
"	in drums (10 gall.) "	0 10 8
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		55 5 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	77 10 0
Red Lead, Dry (packages extra)	per ton	39 0 0
Best Linseed Oil Putty	per cwt.	0 17 0
Filocoi	per cwt.	0 15 6
Size. X D Quality	firkin.	0 3 6

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 14 6
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best ditto	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 6
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 0
Best Black Japan		0 12 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 9 0
Berlin Black		0 14 0
Knotting (patent)		1 5 0
French and Brush Polish		0 17 6
Liquid Dryers in Terebine		0 10 0
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	0
Add if in clay	" "	1	6
Add for every additional depth of 6 ft.	" "	0	9
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	" "	1	2

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	40	0
Add if in underpinning in short lengths	" "	9	0
Add if in floors 6 in. thick	" "	3	9
Add if in beams	" "	4	6
Add if aggregate 1 : 2 : 4	" "	11	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	34	0	0
Add if in stocks	"	8	10	0
Add if in Staffordshire blues	"	24	0	0
Add if in Portland cement and sand	"	3	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat strucks or weathered joint	" "	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	3
Setting ordinary register grates and stoves	each	1	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	5	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	" "	11	0
¾ inch on flats in two thicknesses	" "	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	4

MASON.

		s.	d.
York stone templates fixed	per foot cube	16	3
York stone sills fixed	" "	28	6
Bath stone and all labour fixed	" "	12	0
Portland stone fixed	" "	21	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	79	9
Do. 20 in. × 10 in. Do. Do.	"	90	9
Do. 24 in. × 12 in. Do. Do.	"	99	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	6
Do. joists	" "	6	0
Do. roofs, floors and partitions	" "	6	6
Do. trusses	" "	8	6

		¾"	1"	1½"	2"
Deal rough close boarding	per sq.	42/-	48/-	56/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	60	0
Do. to beams	per ft. sup.	1	6
Centres for arches	"	2	0
Gutter boards and bearers	"	1	1

FLOORING.		¾"	1"	1½"	1¾"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/8	2/1	2/3	2/9

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	3
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size	" "	4	0

DOORS.		1¼"	1¾"	2"
Two-panel square framed	per ft. sup.	2/4	2/7	2/9
Four-panel Do.	"	2/8	3/0	3/3
Two-panel moulded both sides	"	3/0	3/3	3/6
Four-panel Do. Do.	"	3/3	3/7	3/10

CARPENTER AND JOINER—continued.

FRAMES.		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/9	1/10	2/1
Deal shelves and bearers	"	1/6	1/8	1/11
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail ; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	56	0
Do. Do. in flats	"	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	10
Copper nailing	" "	0	7

		¼"	⅜"	½"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10		
Do. service	"	1/5	1/11	2/3	3/6			6/2
Do. soil	"							
Bends in lead pipe	each					3/3		8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6		
Red lead joints	"	11d.	1/-	1/3	1/11	2/4		4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6		9/9
Lead traps and cleaning screws	"				14/7	19/6		
Bib cocks and joints	"	6/4	9/7	15/4	41/-			
Stop cocks and joints	"	15/4	17/2	25/8	64 -			

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	9
Do. Do. Sirapite	" "	2	11
Do. Do. Keen's	" "	4	0
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	10
Portland cement screed	" "	2	1
Do. plain face	" "	3	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	4

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	" "	1	4
Obscured sheet	" "	1	8
¼ in. rolled plate	" "	1	0
¼ in. rough rolled or cast plate	" "	1	1
½ in. wired cast plate	" "	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	0
Knotting and priming	" "	0	8
Plain painting 1 coat	" "	0	11
Do. 2 coats	" "	1	7
Do. 3 coats	" "	2	4
Do. 4 coats	" "	3	0
Graining	" "	2	5
Varnishing twice	" "	1	11
Sizing	" "	0	4
Flatting	" "	0	8
Enamel	" "	1	3
Wax polishing	per foot sup.	0	9
French polishing	" "	1	3
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 11 should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than Tuesday evening.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

ABERGAVENNY.—For alterations and extensions to the "Vine Tree" Inn, and pulling down of the adjoining premises. Mr. B. J. Francis, architect, Abergavenny. Quantities by architect :—

*J. G. Thomas & Sons, Abergavenny	£995

ALDERLEY EDGE.—For erection of cottage hospital, for the Nursing Association Trust :—

*L. Brown & Sons, Ltd., Wilmslow	£10,357

BRIERLEY.—For additional bedrooms, bathrooms, water closets, &c., at Administrative Block of Isolation Hospital, for the Hemsworth Joint Hospital Board. Mr. W. T. Lynam, Surveyor, Union Offices, Hemsworth :—

*W. Hanley & Sons, Hemsworth	£1,200 11

BURNTISLAND.—For erection of 10 houses in connection with Haugh Housing Scheme. Mr. G. Charles Campbell, architect, Methil. Quantities by Messrs. Peter Lawrence & Co., Edinburgh :—

Brick work—	
Andrew Wilson, Cowdenbeath	£2,177 6 5½
T. Menzies & Co., Kirkcaldy	2,171 11 11½
Andrew Wilson, Edinburgh	2,155 12 1
Balfour Bros., Kirkcaldy	2,141 2 7½
Robert Bruce & Son, Edinburgh	2,080 0 0
D. Cowan, Lochgelly	2,053 12 4
John Dennis & Co., Ltd., Dalkeith	2,010 5 0
James Malcolm & Co., Kirkcaldy	1,974 14 6
J. Martin & Sons, Edinburgh	1,916 17 5
Alex. Kinnear, Lundin Links	1,867 19 6
W. Arnott McLeod & Co., Ltd., Edinburgh	1,851 0 0
Alex. Robb & Sons, Edinburgh	1,674 15 0
Carpenter and joiner work—	
Patterson & Martin, Burntisland	1,826 2 7
Rodger & Grieve, Kirkcaldy	1,758 14 9
George Muir, Kirkcaldy	1,477 16 7
Wm. J. Dewar, Burntisland	1,446 6 10
T. Nimmo & Son, Burntisland	1,415 0 0
David Dewar, Methil	1,400 18 0
George Robertson, Inverkeithing	1,379 0 3
E. Swinton & Son, Leven	1,293 19 0
Anderson & Walker, Dunfermline	1,286 16 7
John King & Co., Lochgelly	1,232 7 0½
Plumber and gasfitter work—	
Martin Macaulay, Burntisland	694 4 4½
William Crow, Burntisland	685 17 10
D. Blake & Co., Edinburgh	673 0 0
Henry Hutchison & Sons, Kirkcaldy	617 12 8
William Nicol, Buckhaven	576 0 4
Plaster and concrete work—	
James Williamson & Sons, Burntisland	535 17 10
William Anderson, Burntisland	520 15 5
W. & D. Thomson, Buckhaven	518 12 2
John Ross, Burntisland	443 4 10½
J. & T. Stoble, Buckhaven	425 17 4
Lind Bros., Lochgelly	397 12 3
Slater and roughcast work—	
J. & T. Stoble, Buckhaven	547 15 9
Wm. Anderson & Sons, Edinburgh	541 2 5
William Anderson, Burntisland	529 7 9
George Riddell, Leith	518 10 3
W. & D. Thomson, Buckhaven	515 7 3
T. Hood & Co., Tranent	503 6 9
William Currie, Kirkcaldy	499 10 3
Lind Bros., Lochgelly	479 4 7
James Williamson & Sons, Burntisland	475 5 4
W. Stewart & Sons, Crossgates	472 12 7
John Ross, Burntisland	464 5 3½
Glazier work—	
W. H. Carron & Co., Kirkcaldy	33 7 3
John Haxton & Co., Kirkcaldy	33 7 3

CARNFORTH.—For erection of public conveniences on the Market Ground, for the U.D.C. Mr. N. D. Preston, surveyor, Carnforth :—

E. Just, Carnforth	£414 16 0
R. L. D worth, Lancaster	382 0 5
*J. Rigg & Sons, Carnforth	384 7 7

CHISWICK.—For erection of a women's convenience on Turnham Green Common, for the U.D.C. Mr. Edward Willis, Engineer and Surveyor, Town Hall :—

S. J. Collins & Sons, Wandsworth	£1,695 0 0
Dilliway & Elvy, Kensington	1,651 8 6
T. Millman, Ealing	1,605 0 0
Arding & Hobbs, Lavender Hill	1,597 0 0
Davidson & Sykes, Westminster	1,543 13 0
Perry Bros., Ealing	1,499 0 0
R. Hewett, Ltd., Acton	1,446 15 0
Pallant & Brown, Chiswick	1,395 0 0
Groom, Son & Co., Ealing	836 15 0

CHRISTCHURCH, HANTS.—For the erection of new Infirmary for Women for the B.G. Mr. Herbert Cranshaw, architect, Bournemouth. Quantities by Messrs. Broad, Babbs & Dockerill, Bournemouth :—

H. G. Ross, Netley Abbey	£27,438
Dacombe & Rabbetts, Upper Parkstone	27,169
Musselwhite & Son, Basingstoke	26,825
Jenkins & Sons, Ltd., Bournemouth	25,887
R. Wilkins & Sons, Ltd. Bristol	24,960
Coles Bros., Ltd., Bath	24,791
G. Shears & Sons, Ltd., Bournemouth	24,497
Grit (Portsmouth), Ltd., Portsmouth	24,443
S. Whitelock & Co., Bournemouth	23,891
Wilson, Lovatt & Sons, Ltd., Wolverhampton	23,318
John Knox, Evesham	23,226
Jones & Seward, Bournemouth	23,023
W. J. Parker, Ltd., Westminster	23,000
Theo. Conway, Ltd., Weymouth	22,990
W. Hayward, Bournemouth	22,590
J. Francis, Bournemouth	22,400
National Building Guild, Ltd., Manchester	22,076
W. Moss & Sons, Ltd., London	22,012
J. Jarvis & Sons, Ltd., London	21,675
*W. F. Drew, Ltd., Stroud	21,150
Building & Public Works Construction Co., Ltd., Swindon	20,473

CONGLETON.—For laying a 9 in. sewer at Wheelock Heath, approximately 230 yds., for the R.D.C. Mr. H. Ferrand, Clerk to the Council, Crewe-road, Sandbach :—

James Wells, Stafford	£370
Chandler Bros., Manchester	330
T. Battersby, Manchester	275
H. Hilditch, Sandbach	224
Inchley & Co., Bowdon	223
S. Jackson, Ltd., Sandbach	214
A. Blair, Lyell & Co., Birmingham	209
S. Deeley, Wakefield	203
Arthur Lawton, Congleton	187
J. Taylor & Son, Stoke-on-Trent	187
W. P. & P. G. Hayes, Warrington	175
*Wm. Mulcaster, Crewe	154

COVENTRY.—For erection of house for medical superintendent at the London-road institution of the B.G. Mr. T. F. Tickner, architect, 14, Little Park-street, Coventry. Quantities by Mr. A. W. Hoare, quantity surveyor, Coventry :—

C. A. Anelay, Coventry	£1,960 0 0
Ernest Clarke, Leamington	1,784 0 0
H. Cousins, Coventry	1,737 0 0
W. H. Penn, Coventry	1,725 0 0
Kelley & Son, Coventry	1,698 1 10
A. Matts & Son, Coventry	1,698 0 0
E. C. C. Howells, Coventry	1,695 0 0
J. U. Jones, Coventry	1,666 0 0
E. Harris & Son, Coventry	1,6 8 0 0
Wm. Crane, Ltd., Nottingham	1,637 0 0
J. L. G. Aldridge, Coventry	1,600 0 0
W. H. Jones & Son, Coventry	1,600 0 0
A. Ward, Coventry	1,596 0 0
*H. Clarke & Sons, Coventry	1,580 0 0

EBBW VALE.—For erection of sub-station in connection with the Electricity Department, for the U.D.C. Mr. P. T. Davies, Engineer and Surveyor, Council Offices, Ebbw Vale :—

Stephen D. Bevan, Beaufort	£1,475 0 0
T. Evans & Sons, Ebbw Vale	1,296 13 6
Weaver & Griffiths, Cwm	1,150 0 0
Roderick Bros., Ebbw Vale	1,150 0 0
Cooper & Co., Ebbw Vale	1,053 5 0
†Wm. Miles & Sons, Ebbw Vale	948 0 0

EBBW VALE.—For erection of 28 houses on the Gantre site, for the Council :—

H. & H. W. Bate, Ebbw Vale—	
Type A (4 houses)	£355 each
Type B (24 houses)	340 each

EAST BARNET.—For making up roads on housing estate at Conyers Park, for the U.D.C. :—

*G. H. Greasley, Leicester	£5,150

HIGH WYCOMBE.—Erection of water tower in connection with Stokenchurch water supply, for the R.D.C. :—

D. G. Somerville & Co., Ltd.	£2,065 0 0
J. B. Pierce	1,342 3 6
J. Cochrane & Sons, Ltd.	1,320 3 6
Hodson's, Ltd.	1,145 0 0
*C. H. Hunt & Son, High Wycombe	1,119 18 4

HULL.—For supply of cast-iron pipes for work in Cottingham-road, for the T.C. :—

*Cochrane & Co.	£8 16 6 per ton

HULL.—Construction of railway bridge at Chanterlands-avenue, for the T.C. :—

*J. H. Fenwick & Sons, Hull	£11,750

LEYTON.—For construction of sheds at Electricity Works, and taking down existing buildings and re-erecting same, for the U.D.C. :—

	Amount for taking down existing building and erecting motor dust van shed.	Amount for re-erecting cart sheds on new site adjoining.	Total Amount of Tender.
E. Jackson, Stepney	£2,343 9 0 ..	£682 19 9 ..	£3,026 8 9
J. W. Woolnough, Eastbourne	2,285 0 0 ..	672 0 0 ..	2,957 0 0
Cooper, Upton, Ltd., London	2,139 3 6 ..	579 18 11 ..	2,719 2 5
W. J. Cearns, Stratford	2,066 0 6 ..	595 2 10 ..	2,661 12 4
E. A. Russell, Leytonstone	1,995 0 0 ..	634 0 0 ..	2,629 0 0
J. E. Johnson & Son, Ltd., Leicester	2,011 1 4 ..	597 13 3 ..	2,608 14 7
J. & J. Dean, Leyton	1,898 15 7 ..	631 13 9 ..	2,530 9 4
W. Moss & Son, London	1,876 14 5 ..	578 18 5 ..	2,455 12 10
R. Woollaston & Co., Limehouse	1,881 15 10 ..	532 12 8 ..	2,414 8 6
National Building Guild, Ltd., London	1,710 16 9 ..	702 2 5 ..	2,412 19 2
West & Brooks (Leyton), Ltd., Walthamstow	1,830 0 0 ..	483 16 8 ..	2,313 16 8
W. Harris, Woolwich	1,746 15 5 ..	535 4 7 ..	2,282 0 0
Dilliway & Elvy, Kensington	1,762 11 2 ..	513 7 3 ..	2,275 18 5
*F. J. Coxhead, Leytonstone	1,520 0 0 ..	453 0 0 ..	1,973 0 0

HULL.—For ferro-concrete basement and for filtration plant, for the East Hull baths, for the T.C. :—

Ferro-concrete basement—	
G. H. Scorrer	£1,414 0
J. T. Levitt	1,260 0
G. Houlton & Sons	1,125 0
P. T. Kettlewell	991 0
J. H. Fenwick & Son	963 0
Quibell & Son	907 5
*C. Greenwood & Sons, Hull	877 0
Filtration plant—	
Pulsometer Engineering Co., Leeds	£1,595 0
Tuke & Bell, Ltd., London, W.C.2	1,335 0
Paterson Engineering Co., Ltd., London, W.C.2	1,195 0
*Royles, Ltd., Manchester	1,150 0

LEYTON.—For conversion of Cromwell House into four tenements, for the U.D.C. :—

*West & Brooks (Leyton), Ltd.	£998 7 9

LLANDAFF.—For reconstructing in reinforced concrete the floor, and for painting the ironwork, of the bridge at Pontalybont, for the R.D.C. Mr. W. Farrow, Engineer and Surveyor, Park-place, Cardiff :—

John Harry, Radyr	£324 15 0
Wm. Cox & Sons, Llandaff	299 9 6
Wm. John, Llantrisant	287 2 6
Henry Arthur Hill, Llantwit Vardre	254 11 0
S. C. Westcott, Pontyclun	254 9 2
William E. Lewis, Dinas Powis	245 4 0
Edwin Williams & Sons, Whitchurch	242 5 0
*Lewis & Pritchard, Ltd., Dinas Powis	223 13 3

LONDON, S.W.—For the addition of two shops and a new entrance to the Y.M.C.A. Premises, 643, Fulham-road, for the Trustees of the Fulham and South Kensington Y.M.C.A. Messrs. Kennard & Kennard, F.R.I.B.A., F.S.I., architects, 12, Gray's Inn-square, London, W.C.1. Quantities by the architects :—

E. R. Armfield, Fulham-road, S.W.	£1,608
Pollard & Co., St. John's-square, W.C.	1,598
Albert Monk, Lower Edmonton, N. 9	1,525
Y. J. Lovell & Son, Marlow, Bucks.	1,480
The Edwards Construction Co., High-street, Eltham	1,417
Swan Bros., Fulham, S.W.	1,400
J. E. Whiter, Newington Butts, S.E.	1,374
F. & F. K. Dainton, Highbury, N.5	1,291
Rice & Son, Stockwell-road, S.W.	1,255
Whitby Bros., Eagle-street, W.C.1	1,229
*W. A. Taylor, N. Finchley, N. 12	1,200

LONDON.—For new buildings, &c., at the rear of 75, High-road, Wood Green :—

*Sydney Goulding, Hornsey	£406

LONDON.—For heating and ventilating apparatus at the Central Repair Depot, for the L.C.C. :—

Thermotank Co., Glasgow	£8,250 0
Young, Austen & Young, Leicester	6,217 0
Colley, Melkle & Co., Ltd., W.C.1	5,498 0
Ashwell & Nesbit, Ltd., W.C.1	5,380 0
R. Crittall & Co., Ltd., W.C.1	5,240 10
Standard Engineering Co., Ltd., Leicester	5,202 0
Brightside Foundry & Engineering Co., Ltd., S.E.1	5,053 0
H. J. Cash & Co., Ltd., S.W.	4,930 0
J. Jeffreys & Co., Ltd., S.E.1	4,892 0
*Dallow, Lambert & Co., Ltd., Leicester	4,367 0

LONDON.—For erection of six cottage homes and four flats in two blocks, for the Disabled Soldiers' and Sailors' (Hackney) Foundation. Messrs. Gunton & Gunton, architects, Finsbury House, Blomfield-street, E.C.2 :—

R. J. Senecal	£6,729
G. F. Kearley, Ltd.	6,426
Griggs & Son	6,381
F. G. Minter	6,273
E. A. Roome & Co.	6,173
L. H. & R. Roberts	5,876
Shurmur & Sons	5,850
R. A. Reader	5,701
Perry & Co. (Bow), Ltd.	5,698
Bovis, Ltd.	5,690
Lavington, Ltd.	5,577
E. B. Holmes & Co.	5,499
T. & G. Foster & Co., Norwood	5,379

PRESTON.—For additions and alterations at the Park School, Moor Park, for the T.C. Mr. J. S. Bullough, Borough Surveyor, Town Hall, Preston :—

*G. Hill & Sons, Preston	£1,573 18

ROTHERHAM.—For painting and decorating work at the Market Hall, for the T.C. The Borough Engineer, Frederick-street, Rotherham :—

W. H. Trehern, Ltd., Rotherham	£510	0	0
C. F. Whittle, Rotherham	398	0	0
F. Woollen, Rotherham	348	0	0
Flint Bros., Sheffield	340	0	0
Stanley Nellar, Rotherham	319	0	0
Haigh, Son, & Co., Rotherham	285	0	0
Chadwick & Co., Ltd., Rotherham	282	0	0
Banner Cox, Rotherham	242	10	0
Vickers & Sons, Rotherham	240	2	6
*Harrison Bros., Rotherham	234	9	0

SHEFFIELD.—For external painting of 199 houses at High Wincobank, for the T.C. :—

*Sheffield and Ecclesall Co-operative Soc. £295

SHEFFIELD.—Alterations for open access library, for the T.C. :—

*G. Longden & Son..... £975

SOUTHEND-ON-SEA.—Construction of shelters on north side of Western Esplanade, for the T.C. :—

*J. Atkinson, Southend..... £732 11 11

SOUTHEND-ON-SEA.—Erection of new ward block at Sanatorium, for the T.C. :—

*B. H. Davey, Southend..... £5,600

SOUTHEND-ON-SEA.—Supply of steam roller, to the T.C. :—

*Aveling & Porter..... £851 8

STOKE-ON-TRENT.—For conversion of 202 privy cesspools, for the T.C. The Surveyor, Health Department, Stoke-on-Trent :—

*W. Ball & Sons, Stoke-on-Trent—

New-street	£435	10	0
Marsh-street, Layta (22 privies)	218	0	0
	653	10	0

Ball & Robinson, Stoke-on-Trent—

London-road	506	14	6
Selwyn-street	450	12	0
	957	6	6

TRADE NEWS.

Eastwoods, Ltd., brick manufacturers and builders' merchants, 47, Belvedere-road, Lambeth, S.E. 1, have sent us a copy of their booklet on "The Process of Making, Drying and Burning Stock Bricks."

The Redaluma Paint Co. have placed on the market a specially prepared protective paint, "Alredma." It is claimed that, on the grounds of its covering capacity and cheapness as compared with red lead, it should be an attractive proposition.

The Val de Travers Asphalte Paving Co., Ltd., have issued a booklet containing illustrations of roads carried out in the firm's Natural Asphalte Matrix.

Messrs. Young & Marten, Ltd., Caledonian Works, Stratford, have sent us copies of their "Hue" Fire Catalogue and "Supremus" Sanitary List. Both are tastefully produced and well worth perusal.

Cuirass Products, Ltd., Victoria-street, Westminster, S.W.2, have sent us a descriptive leaflet and price list of their wood preservatives and stains. These are manufactured from a creosote base and can be immediately varnished or French polished without any undercoating being necessary.

Holophane, Ltd., Elverton-street, Vincent-square, S.W.1, have sent us a pamphlet illustrating and describing the Holophane Filterlite, a new type of semi-indirect lighting unit which they have recently placed on the market.

PARQUET & WOOD-BLOCK FLOORING supplied and fixed complete in any locality. PARQUET DANCE FLOORS a speciality.—Send Particulars of requirements to TURPIN'S PARQUET FLOORING CO., 25, NOTTING HILL GATE, LONDON, W.11. Phone: PARK 1884.

J. GLIKSTEN & SON LIMITED
Specialities in
SEASONED HARDWOODS
MAHOGANY WALNUT
JAPANESE, AMERICAN and WAINSCOT OAK, TEAK, WHITEWOOD, &c.
REGISTERED OFFICE AND WHARF:
CARPENTERS RD. STRATFORD LONDON E.15
Telephone: EAST 3771 (5 lines) Telegrams: GLIKSTEN 'PHONE LONDON.

Hospital & School Stoves
MAKERS OF
WRIGHT'S IMPROVED and also SHORLAND PATENT WARM AIR VENTILATING PATTERNS.
GEO. WRIGHT (LONDON) LIMITED,
10, Newman St., Oxford St., London, W.1
Burton Weir Works, Botherham.

J. J. ETRIDGE, Jr. Ltd
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS.
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone: Bishopsgate 1944/5, or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

HIGH-CLASS
FLOORINGS
of every description in
WOOD BLOCKS. PARQUETRY
SEASONED T. & G. WAINSCOT OAK
TEAK AND MAPLE.
FACTORY AND ROADWAY PAVING
STEVENS & ADAMS
LIMITED
VICTORIA MILL, POINT PLEASANT
WANDSWORTH, S.W.18.
(Phones: Putney 1700 & 2457)

All kinds of
SLATING
TILING
ASBESTOS ROOFING etc.
by
H. NETHERCOT & CO.
of
STRATFORD MARKET, E., HARROW & SOUTHEND
Repairs to Leaky Roofs a Speciality.
Wall and Floor Tiling of all kinds.
Cement, Lime, Pipes, etc.
Telephones
Maryland 1351, Harrow 78 & Southend-on-Sea 482

Telephone: DALSTON 1388.
OGILVIE & CO., Many years connected with the late firm of W. H. LASCELLES & Co. of Bunhill Row.
Mildmay Works, Mildmay Avenue, Islington, N.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

FARMER & BRINDLEY LTD.
CARVERS
WORKERS IN
MARBLE ETC.
WESTMINSTER BRIDGE ROAD · LONDON.

HOWELL J. WILLIAMS Ltd.
Builders
High-Class Building
and
Joinery Work
11/17, BERMONDSEY STREET,
Telephone: HOP 202 LONDON BRIDGE, S.E.1
Builders of very many well-known Banks, Office and Business premises. Our works especially convenient for City Building and fittings.